

Thanh Ha-Vikström
**Measuring
Leadership
Behaviour in a
Global Industry**

Sand Cone Model of Transformational Leadership and
People, Process and Goal Model



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Julkaisun nimike Johtamiskäyttötymisen mittaaminen globaalissa teollisuudessa: muutosjohtamisen Sand Cone sekä People, Process and Goal -mallit			
Tiivistelmä On jo pitkään ymmärretty, että johtaminen vaikuttaa merkittävästi henkilöstön työtyytyväisyyteen ja lojaaliuteen työnantajaa kohtaan, mikä puolestaan vaikuttaa suoraan organisaation menestykseen. Mutta miten voi yhä kovemmin kilpaillussa yritysmaailmassa tunnistaa hyvän johtajan suuresta joukosta? Tämä väitöskirja tutkii tapoja mitata johtamiskäyttötymisen eri ulottuvuuksia siten kuin johtajat itse ne kokevat globaalissa organisaatiossa. Väitöskirja koostuu viidestä vertaisarvioidusta julkaisusta, joissa laadullisia, määrällisiä ja monimenetelmällisyyttä hyödyntäviä menetelmiä on käytetty tutkimusongelmien kattavaan tarkasteluun. Väitöskirjassa esitetään kaksi johtamiskäyttötymisen eri ulottuvuuksia arvioivaa ja mittaavaa mallia sekä niihin liittyvät prosessit ja tekniikat. Kyseessä ovat muuntavan johtajuuden Sand Cone -malli (SCM) sekä People, Process and Goal -malli (PPG). Ensimmäinen malli keskittyy transformationaalisen eli muuntavan johtajuuden tehokkuuden tarkasteluun, kun taas jälkimmäinen malli tunnistaa johtamistyön painopistealueita ja auttaa kehittämään johtajien vahvuuksia ja osaamista, mutta myös vähemmän kehittyneitä kyvykkyyksiä. Molemmat mallit laajentavat johtamiskäyttötymisen teoriaperustaa. Sand Cone -mallia voidaan käyttää erityisesti lyhyen aikavälin hahmotuksiin, kun taas People, Process and Goal -malli soveltuu parhaiten pitkäaikaisiin kehitystehtäviin. Johtajille suositellaan Sand Cone -mallin hyödyntämistä olemassa olevien johtamisvalmiuksiensa kehittämiseen. Korkean tason johtoryhmille suositellaan People, Process and Goal -mallin käyttämistä eri johtamisalueiden tasapainon määrittelyyn ja sitä kautta organisaation monipuoliseksi menestykseksi.			
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Abstract <p>It has long been understood that leadership behaviour plays a crucial role in keeping employees happy and loyal, which in turn directly contributes to organizational success. But, in today's increasingly competitive world, how is it possible to distinguish a great leader among a crowded workforce?</p> <p>The main purpose of this dissertation is to explore ways of measuring different dimensions of leadership behaviour as perceived by leaders themselves within a global organization. This dissertation is composed of five peer-reviewed publications in which qualitative, quantitative and triangulation approaches were employed to provide a more comprehensive treatment of research problems.</p> <p>This dissertation offers two models with feasible processes and techniques, which can evaluate and measure different dimensions of leadership behaviour: the sand cone model (SCM) of transformational leadership and the people, process and goal model (PPGM). The first model focuses on the effectiveness of transformational leadership behaviour, while the latter identifies leaders' focus areas and helps to develop leaders' strengths and priorities, as well as less cultivated abilities.</p> <p>Both of the models extend the theories of leadership behaviour. The SCM can be used for short-term visions, whereas the PPGM is best suited for long-term endeavours. Each leader is encouraged to utilize the SCM to enhance their current leadership skills, while higher-level management teams are recommended to use the PPGM to define the healthiest balance between different leadership focus areas for their own organizational success.</p>		
Keywords Leadership behaviour, transformational leadership, Sand Cone Model, People Process and Goal Model, leadership effectiveness		

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“The more I learn, the more I realize how much I don’t know.”

– Albert Einstein

When young, I was already interested in learning more and trying to do my best. After moving to Finland and starting a new life, and since becoming a wife and a mum at home, as well as an employee, these different roles have not allowed me to follow my dream of undertaking PhD research earlier.

Happily, in August 2015, when I was accepted as a PhD candidate, I decided to regard studying as one of my serious hobbies. Luckily, staying motivated and working hard have always been my greatest strengths, while learning new things is also a passion of mine. In addition, the knowledge I gained from different business units, during my 22 years of experience in the supply chain sector, has been a gold mine for my studies. Indeed, all of the above has made my research much more joyful and easier than I ever thought.

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“In everyone’s life, at some time, our inner fire goes out. It is then burst into flame by an encounter with another human being. We should all be thankful for those people who rekindle the inner spirit.”

– Albert Schweitzer

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Abbreviations

AHP	Analytic Hierarchy Process
BT	Building trust and confidence
CL	Controlling leadership
CR	Consistency ratio
DL	Dynamic leadership
EE	Extra Effort
EF	Effectiveness
IC	Individualized consideration
IM	Inspirational motivation
IS	Intellectual stimulation
IT	Information systems
OR	Organization groups & teams
PC	Processes
PL	Passive leadership
PPGM	People, Process and Goal Model
PT	People, technology and know-how
SA	Satisfaction
SCM	Sand Cone Model
TL	Transformational leadership

List of Publications

- [1] Ha-Vikström, T. & Takala, J. (2016a). *Knowledge Management and Analytical Modelling for Transformational Leadership Profiles in a Multinational Company*. In *Successes and Failures of Knowledge Management*, edited by J. Liebowitz, 151–174. Elsevier, Inc.¹
- [2] Ha-Vikström, T. & Takala, J. (2016b). Measuring transformational leadership profiles – An empirical study across 21 nations in a multinational company. *Theoretical Issues in Ergonomics Science*, 19(1). (Published online: October 2016).²
- [3] Ha-Vikström, T. & Takala, J. (2016c). Do cultures, genders, education, working experience or financial status influence the effectiveness of transformational leaders? *Theoretical Issues in Ergonomics Science*, 19(1). (Published online: December 2016).³
- [4] Ha-Vikström, T. (2017). People-, process- and goal-focused leadership behaviour: an empirical study in a global company. *Management journal*, 12(1), 75-103.⁴
- [5] Ha-Vikström, T. (2018). The People, Process and Goal model vs. the Sand Cone model of Transformational leadership - critical evaluation. Received July 2017, Accepted December 2017. *Management journal*, 13(1).⁵

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1 INTRODUCTION

This chapter presents an overview of the entire dissertation. Firstly, the research background is introduced along with research gaps in the existing literature. Secondly, research questions and objectives are articulated and, finally, the structure of the study is described.

While management and leadership can be distinguished as concepts and practices, in this study, leadership and management are understood to be overlapping and complementary responsibilities, which the informants assume in their managerial capacity. In this dissertation, the terms 'leader' and 'manager' will be used interchangeably when referring to the informants (based on the position they have in their organization). Similarly, the terms 'follower' and 'subordinate' will be used interchangeably.

1.1 Research background and research gaps

The main purpose of this dissertation is to explore ways of measuring different dimensions of leadership behaviour as perceived by leaders themselves in a global organization. The relevant ways of measuring are approached with two goals in mind. The first goal is to pursue and validate the existing sand cone model (SCM), which evaluates the effectiveness of transformational leadership behaviour. Second, this thesis aims to explore the key focus areas of leadership behaviour (beyond transformational leadership perspectives), which are perceived and experienced by managers across different organizational levels.

In today's evolving business world, change is more rapid and dramatic than ever before. In order to succeed in this world, multinational organizations need to grow and embrace the speed of change. Business leaders, meanwhile, need to enhance employees' aspiration and activate their higher-order needs through ethical, symbolic and helping behaviours (Bass et al. 2003; Antonakis and House 2014). In a recent published book, *Ringtone: Exploring the Rise and Fall of Nokia in Mobile Phones*, Professor Yves Doz and senior researcher Keeley Wilson (2017) analyse the Finnish company's journey, from its amazing success in the mobile phone business to its sudden downfall, concluding that it was neither Apple nor Samsung that contributed to Nokia's failure. Rather, it was Nokia's own leadership and organizational structure. This is only additional new evidence to show the ever-important role of leadership behaviour in business success.

Bass and Riggio (2006) insist that, in a challenging organization or a complexly diverse team (such as in a multinational organization), where followers significantly require an inspirational leader, who can inspire and motivate them through an uncertain situation, **transformational leadership** will be a perfect fit. Bass and Avolio (1994), Bass (1998) and Avolio (1999) define transformational leadership in terms of a theory of behaviours and attributes focused on the relationship between leaders and followers of a group or organization. Transformational leaders inspire followers to think differently and critically, encourage and motivate them, and recognize each follower's different needs in order to improve his or her personal potential.

When leaders are unable to coordinate and align employee and organizational needs, or when they fail to “manage to keep the agility and strategy insight that led to meteoric growth” (Doz and Wilson 2017), they may lead a corporate work group or an overall organization from success to downfall. To express this more simply, Prinsloo, (2012), Kang and Jin, (2015), and Culp and Smith (2005) admit that poor leaders create dissatisfaction, while, conversely, great leaders make a great difference to organizational success. However, in an increasingly competitive world, without any helpful measurement tool, how is it possible to distinguish a great leader among a crowded workforce?

Since 1990, many researchers have developed measurement methods by describing theories and techniques with which to highlight the correlation between different leadership styles and performance (Podsakoff, Mackenzie, Moorman and Fetter 1990; Schaubroeck, Lam and Cha 2007). In parallel with this, Nissinen (2001) investigated the theoretical model developed by Bass (1985) and introduced a model of deep leadership, which analyses the relationships between different leadership factors based on a large-scale data collection. From this perspective, Takala, Hirvelä, Hiippala and Nissinen (2005), Takala, Hirvelä et al. (2006), Takala, Leskinen, Sivusuo, Hirvelä and Kekäle (2006b), and Takala, Kukkola and Pennanen (2008a) re-examined the theoretical model and introduced a conceptual SCM, which can evaluate leadership behaviours, from resource allocations to the direction of outcomes. This concept was studied and tested in a military environment in Finland from 2005 to 2008.

Given the promising findings of this longitudinal research, a series of studies, i.e., Kazmi and Takala (2011, 2012), Kazmi and Kinnunen (2012), Kazmi, Naaranoja and Takala (2013), Kazmi and Naaranoja (2013), and Kazmi, Takala and Naaranoja (2015), has continued and developed this knowledge of theories based on the previously collected data. The increasing importance and popularity of the theory of transformational leadership, together with the SCM, combined with the

lack of empirical research to verify and validate the aforementioned conceptual model in an environment other than the military, highlight the need for an empirical study on this topic.

Publications 1, 2 and 3 of this dissertation provide the knowledge of theory about the transformational leadership behaviour trend in a global company, and the knowledge of how culture, gender, education or financial status influences the effectiveness of transformational leadership. The first three publications also offer the knowledge of practice, in the form of the SCM, with which to measure the effectiveness of transformational leadership behaviour. The knowledge of theory and knowledge of practice are either substitutes for or complement each other.

Moreover, beyond transformational leadership behaviour, Publications 4 and 5 offer the knowledge of theory about the different dimensions of leadership behaviour, and the knowledge of practice through the people, process and goal model (PPGM), a new normative model that can measure the key focus areas of leadership behaviour across different organizational levels.

In brief, this research adopted a case study strategy, which was implemented by the researchers from both inside and outside the studied organization. For example, the co-author of the first three publications is a professor from the university and the author is from the organization. Participants were from different business units located in different geographical zones around the world. The overall empirical dissertation provides relevant ways of measuring different dimensions of leadership behaviour. Alongside being directly and immediately relevant to managers, it addresses important issues and presents new ways by which managers can understand and act on them (Saunders, Lewis and Thornhill 2009: 8).

1.2 Research objectives

This dissertation consists of two main problems: the first is how to assess and measure the effectiveness of transformational leadership behaviour, while the second is how to evaluate and measure the key focus areas of leadership behaviour beyond the transformational leadership style. Each publication has its own objective

The first objective is to pursue and validate the existing SCM of transformational leadership (which has been studied during the last decade in the military environment) by testing it in a new business environment. The first publication provides an improved SCM with five new equations and a new layout of a

transformational leadership profile. These findings provide Publications 2 and 3 with two objectives.

The second objective is to validate and verify the new SCM with a larger number of participants, from $N = 26$ to $N = 86$. The sample is also expanded from one country (in Publication 1) to 21 countries (in Publication 2). Due to the large data obtained from Publication 2, there is a need to establish a third objective: to explore the influence of culture, gender, education, working experience and financial status on the effectiveness of transformational leaders.

Next, the objective of Publication 4 is to explore the key focus areas of managerial behaviour across different organizational levels. The fourth publication provides a new model, the PPGM. Finally, the last publication's objective is to compare two new findings (the SCM and the PPGM), and self-critically assess the major benefits and limitations, as well as judge how the two models could be combined or prioritized. Figure 1 presents the objectives of the five publications and their logical interconnection.

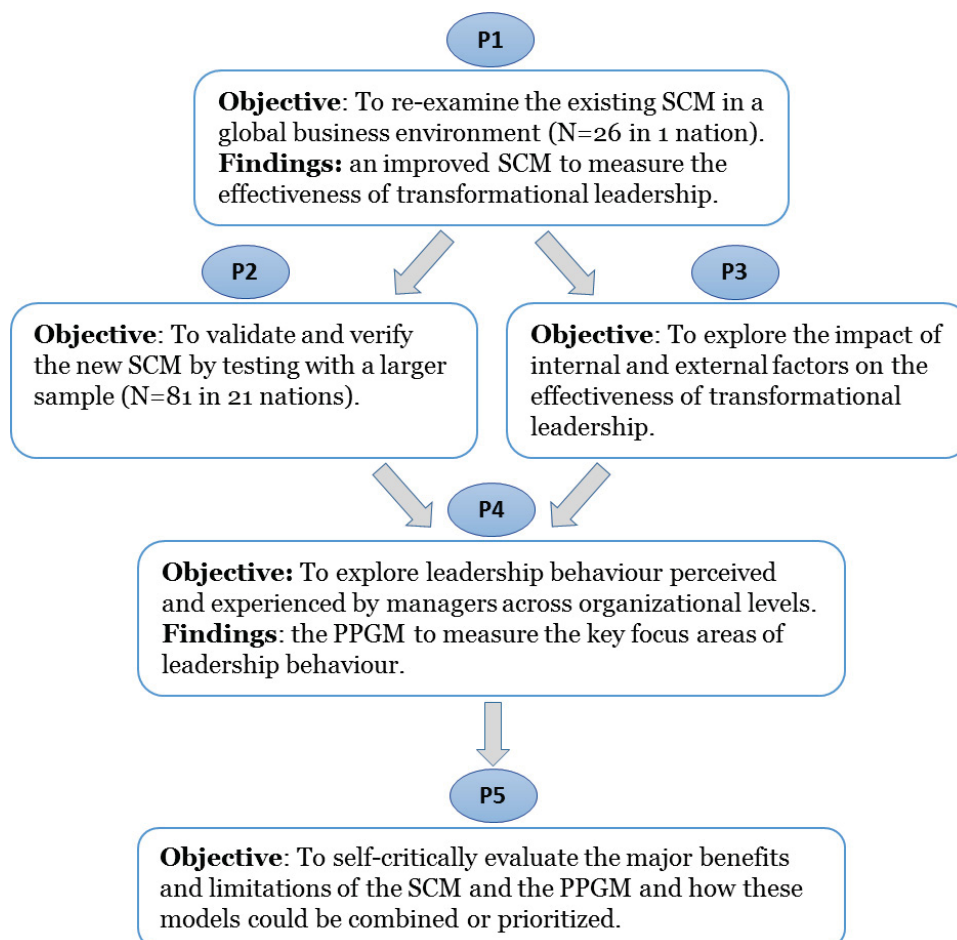


Figure 1. Dissertation objectives

1.3 Research questions

In accomplishing the research objective, this dissertation focuses on the following research questions:

Research question 1: What is the current transformational leadership trend in a global business organization?

Research question 2: To what extent do leaders display transformational leadership effectiveness?

Research question 3: In what ways, and to what extent, does culture, gender, education, working experience or financial status influence the effectiveness of transformational leadership?

Research question 4: How is leadership behaviour manifested across different organizational levels?

Research question 5: What are the major benefits and limitations of the SCM and the PPGM, and how could the models be combined or prioritized?

Table 1 describes brief information about the five publications, including the specific research questions for each publication, the theoretical background, the research method used, and the key data sources that informed the analysis, as well as the samples.

Table 1. Research questions, research method, theoretical background, key data sources and sample.

	Publication 1	Publication 2	Publication 3	Publication 4	Publication 5
Research question	What is the current transformational leadership trend in a global business organization?	To what extent do leaders display transformational leadership effectiveness?	Do cultures, genders, education or financial status influence the effectiveness of transformational leadership?	How is leadership behaviour manifested across different organizational levels?	What are major benefits and limitations of the two models (SCM and PPGM) and how could the models be combined or prioritized?
Research method	Quantitative case study	Quantitative case study	Quantitative case study	Quantitative and qualitative case study (Triangulation data)	Qualitative comparative case study
Theoretical background	The transformational leadership model and the SCM	The improved SCM	The improved SCM	Different dimensions of leadership behaviours	The SCM and the PPGM
Key data sources	Analytic hierarchy process-based (AHP-based) questionnaire and secondary data	AHP-based questionnaire and secondary data	AHP-based questionnaire and secondary data	Questionnaire, in-depth interview, observations and secondary data	Extensive secondary data
Sample	26 managers, in four different business units, from one nation	86 managers, in four different business units, from 21 countries	86 managers, in four different business units, from 21 countries	20 leaders across organizational levels (directors, general and line managers)	Based on samples derived from Publications 1 to 4

1.4 Structure of the dissertation

This dissertation is divided into two main parts. The first part of the dissertation consists of six chapters, while the second part contains five publications. Chapter 1 of the first part introduces an overview of the entire dissertation, which includes the research background and research gap, followed by research questions and objectives. Chapter 2 presents the fundamental theories that shape the foundation of the study. Chapter 3 sets out the research design and methodology adopted in this dissertation. Chapter 4 summarizes the publications objectives and results. Chapter 5 constitutes the discussion and contributions to the literature. Chapter 6 concludes the entire dissertation. Figure 2 illustrates the structure of the first part of this dissertation.

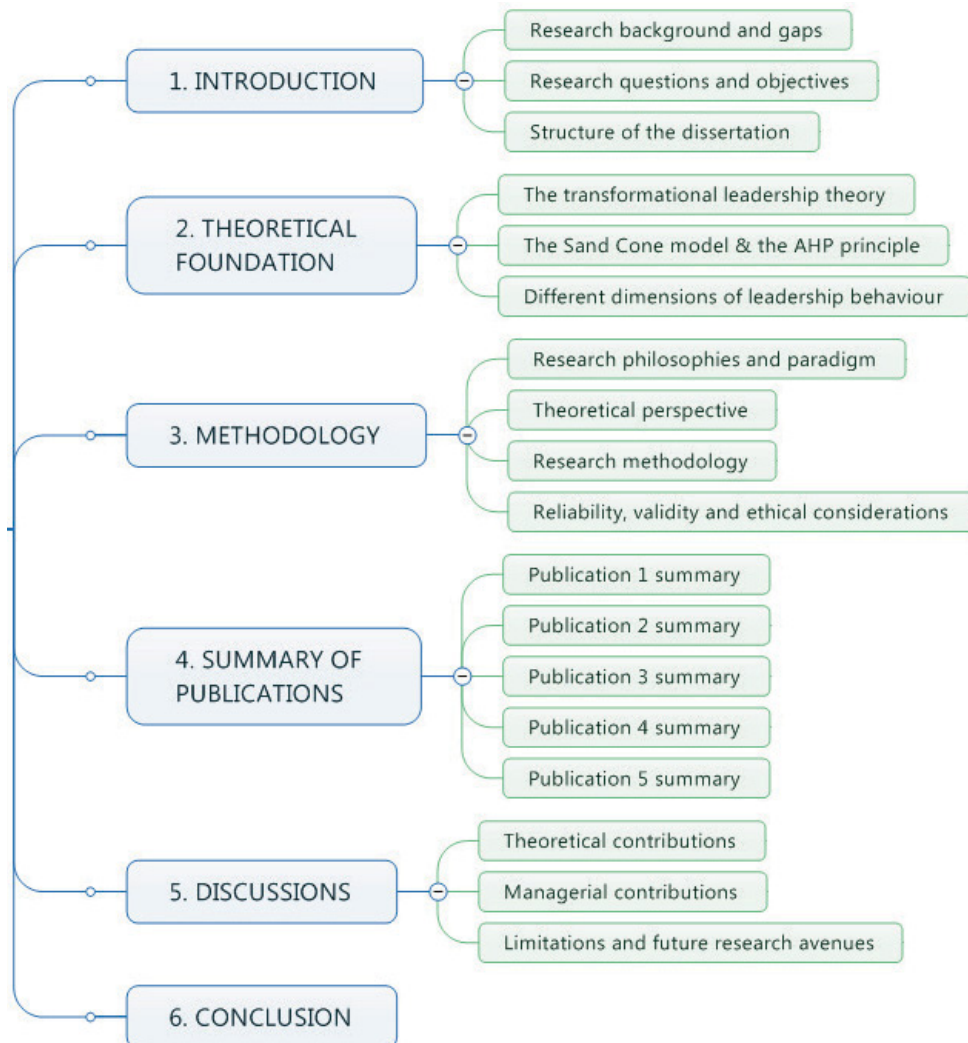


Figure 2. Structure of the dissertation

2 THEORETICAL FOUNDATION

This chapter presents an outline of the fundamental theories and models, as well as the key concepts and their mutual relationships, which shape the foundation of this research.

As stated in the introductory chapter, the purpose of this dissertation is twofold: firstly, to pursue and validate the effectiveness of transformational leadership behaviour; secondly, to explore the key focus areas of leadership behaviours, which are perceived and experienced by managers in a multinational company. The key model for the first aim is the SCM of transformational leadership that is related to the Analytic hierarchy process (AHP) principle. The AHP is a theory of measurement that employs pairwise comparisons and relies on the judgements of experts to derive priority scales (Saaty 2008: 83). The key theories for the second aim are the different dimensions of leadership behaviour, such as relations-oriented or task-oriented behaviour. Publications 1, 2 and 3 are concerned with the theories of transformational leadership and the re-examined SCM, while Publications 4 and 5 are concerned with three focus areas of leadership behaviour: people, process and goal.

2.1 The transformational leadership model

Before getting into details about the transformational leadership model, it is necessary to understand the basic principle of normative transformational leadership theory. According to Dinh et al. (2014), at least 66 different theoretical leadership domains have emerged to date, of which the most widespread theories are: 'great man' theory (1840s), trait theory (1930s-1940s), behavioural theories (1940s-1950s), contingency theories (1960s), and transactional theories and transformational leadership theories (1970s). Transactional theories are based on rewards and punishments and focus on the role of supervision. "Transactional leaders are concerned with protecting their interests rather than in promoting the interests of the group. They are more likely to be controlling than empowering" (Johnson 2011: 231). In contrast, transformational leadership concentrates on the moral commitments between leaders and followers, as well as four common elements: visioning, challenging, consideration, and serving as an example (Bass 1985; Kouzes and Posner 1988; Tichy and Devana 1990).

Table 2 shows a succinct review of these major leadership theories.

Table 2. An overview of major leadership theories

‘Great man’ theory (1840s)	This theory believes that great leaders are born, not made. Leaders as heroic and only a man can have the quality characteristics of a great leader.
Trait theory (1930’s – 1940s)	This theory believes that people inherit certain qualities and traits which make them better suited to leadership (e.g. intelligence, sense of responsibility extroversion).
Behavioural theories (1940s – 1950s)	Leaders are made, not born. This theory is the flip side to the ‘great man’ theory. This theory focuses on specific behaviours of a leader, not on mental qualities or internal states.
Contingency theories (1960s)	No leadership style is suitable for all situations. Leadership is not about the qualities of the leader; it is about striking the right balance between behaviours, needs and context.
Transactional leadership theories (1970s)	Often used in business flip side, transactional theories are based on rewards and punishments. They focus on the role of supervision, organization and group performance.
Transformational leadership theories (1970s)	Transformational leadership theories focus on the relation between leaders and followers. Transformational leaders inspire, encourage subordinates, and focus on the performance of group members, while also increasing the potential of each individual. Transformational leaders often have high ethical and moral standards.

Source: Author’s understanding based on Gill (2011), and Landis, Hill, and Harvey (2014).

Background to the transformational leadership model: a transformational leadership overview

Transformational leadership is a theory of behaviours and attributes focused on the relationship between leaders and followers of a group or organization (Avolio 1999; Bass and Avolio 1990). This theory was first introduced theoretically by Burns (1978), then developed and conceptualized by Bass (1985), and many other researchers (Bass and Riggio 2006; Bass and Bass 2008; Avolio 1999; Bass and Avolio 1994).

During the last three decades, transformational leadership has emerged as one of the most dominant leadership theories (Díaz-Sáenz 2011; Mhatre and Riggio 2014). In terms of the positive effects of transformational leadership, research on 318 employees from six German companies in the information and communication technology sector, undertaken by Jacobs, Pfaff and Lehner (2013), revealed a significant relationship between transformational leadership and employee well-being. In line with these findings, a study of 357 managers by Jin, Seo and Shapiro (2016) reported the positive well-being of subordinates as a result of transformational leaders. In parallel with this, Li, Zhao and Begley (2015) analysed 123 branches of a retail bank in China. Their results showed that transformational leadership is positively related to employees' creativity (see also Bai, Lin and Li 2016). Furthermore, a recent study in 2016 by Wang, Kim and Lee on 62 teams highlighted the positive effects of transformational leadership on diverse teams, which in turn contribute to higher team motivation and team creativity.

The normative characteristic of transformational leadership theories is the recommendation that both leaders and subordinates should engage in a common goal and help each other to advance to a higher level of morality and motivation (Burn 1978, 2003; Bass 1985; Avolio 1999; Bass and Riggio 2006). Transformational leaders influence followers by inspiring them to think differently and critically (i.e., looking for new ways and perceptions), involving followers in decision-making processes and inspiring loyalty, while recognizing and appreciating the different needs of each follower to develop his or her personal potential. Transformational leaders, as defined by Bass and Avolio (1994), and Bass and Riggio (2006), are those who stimulate and inspire followers to explore existing as well as new horizons. In other words, transformational leadership provides a perfect fit for challenging organizations or complicated work groups, where followers need an inspirational leader who can motivate and encourage them through a complex or uncertain situation, as well as make them feel empowered (Bass and Riggio 2006).

Transformational leadership involves four primary components: idealized influence, inspirational motivation, intellectual stimulation and individualized consideration. Bass (1985) defined these "four Is" as cornerstones of transformational leadership.

Idealized influence refers to leaders who act as role models with high ethical principles: they are admired and trusted and will go beyond their individual self-interest for the greater good of the group and make personal sacrifices for others'

benefit (Podsakoff, Mackenzie and Bommer 1996; Whitener 1997; Bass and Steidlmeier 1999; Dirks and Ferrin 2002; Bass and Riggio 2006; Kazmi, Naarananoja and Kytola 2016).

Individualized consideration describes the extent to which leaders listen, accept and take into consideration subordinates' unique needs. The leaders act as a mentor or coach, encouraging two-way communication, listening to others' concerns and helping colleagues to develop their strengths (Bass and Riggio 2006; Hughes 2014).

Inspirational motivation characterizes leaders who behave enthusiastically and optimistically. They share positive future visions, display confidence and communicate expectations that subordinates want to meet (Bass and Riggio 2006; Bass 1985). This type of motivational behaviour encourages a sense of team spirit, creating general enthusiasm, especially towards difficult challenges (Hughes 2014: 9).

Intellectual stimulation implies leaders who focus on stimulating subordinates' creativity and innovativeness. These leaders seek differing perspectives, encourage their team member to think out of the box when solving problems and generate new ideas to complete assignments (Jung and Avolio 1999; Bono and Judge 2003; Bass and Riggio 2006; Northouse 2013).

These four 'Is' emerge and establish a central idea of transformational leadership to indicate how leaders effectively achieve the desired behaviour to satisfy their followers and gain each other's respect. Bass (1977) insists that these four antecedents' behavioural traits of transformational leadership are generic in their nature, can exceed different nationalities and cultures, and are not limited to specific types of operating environment for leaders.

According to Ng (2016) and Sosik et al. (1998), the most important behaviour is *individualized consideration* as transformational leaders using this behaviour listen to followers' concerns, spend time coaching them and help them to develop their strengths, "and in doing so, the leaders promote self-development" (Hughes 2014: 9). Meanwhile, Herrmann and Felfe (2014) argue that *intellectual stimulation* enhances individuals' creative outcomes. In line with these findings, Mumford et al. (2002) propose that *inspirational motivation* and *intellectual stimulation* promote creativity.

In terms of innovation process, Hyypiä and Parjanen (2013) believe that *idealized influence* and *inspirational motivation* are practiced more in the initial phases,

whereas *intellectual stimulation* is performed more in the later phases. Given that *individualized consideration* is especially varied in different phases, it should be used at all times during the innovation process.

Nissinen (2001, 2004) and Takala et al. (2006a, 2006b, 2008b) have utilized these four I components as the foundation of, and incorporated them into, their transformational leadership model, which will be presented in the following section.

Transformational leadership model

The transformational leadership model is a tool that has been adopted from educational psychology and leadership training to enhance leadership coaching in operational environments (Nissinen 2001; Takala 2002; Takala et al. 2005, 2006a, 2006b, 2008b; Tommila et al. 2008; Takala and Uusitalo 2012; Takala et al. 2013). The model was developed based on the foundation of transformational leadership ideas, as mentioned above.

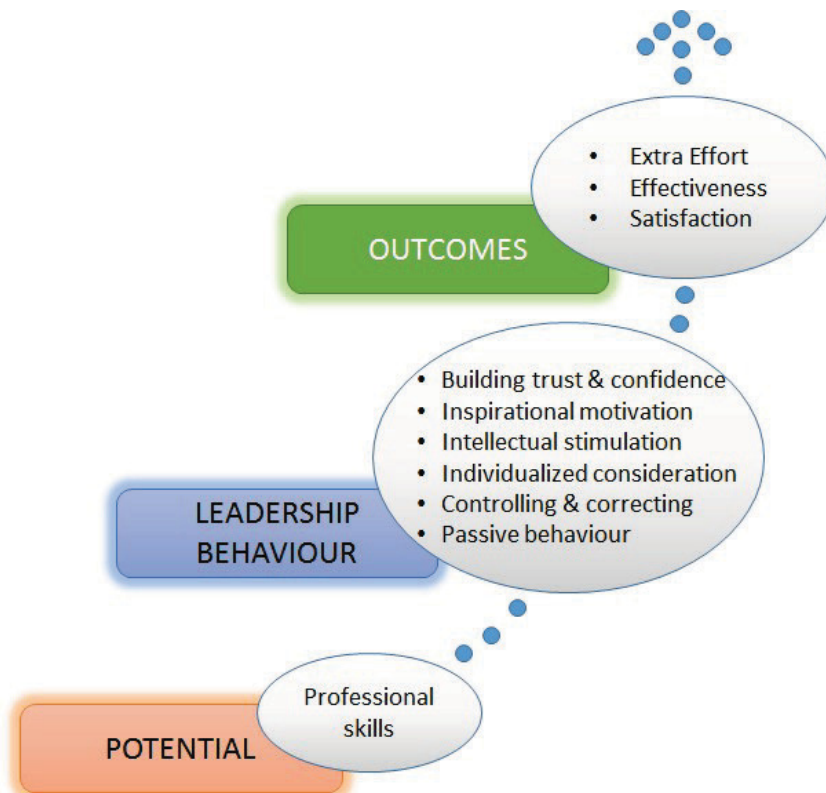


Figure 3. Transformational leadership model (adapted from Takala et al. 2008b)

Figure 3 depicts a bridge between theory and practice (Takala et al. 2005, 2006a, 2008b). The potential for leadership can evolve into achieved outcomes as a result of appropriate and effective leadership behaviour. Professional skills are the knowledge base and practical skills that a person learns from his or her working life as “the basic requirement of excellent leadership behaviour” (Nissinen 2001). They are the necessary foundation (**potential**) for leaders. Next, the middle level (**leadership behaviours**) consists of six factors, in which the first four factors are the cornerstones, i.e., a) building trust and confidence, b) individualized consideration, c) inspirational motivation, and d) intellectual stimulation. Two additional behaviours in the second level can be seen as the least effective behaviours, i.e., controlling and passive behaviour. Controlling leaders concentrate more on corrective actions, usually do not listen to the opinions of followers, and always take part in every decision. Passive leaders do not appear to have much ambition to move up; they can either avoid responsibility or delay their decision-making.

Finally, the third level (**outcomes**) of this model contains three variables: effectiveness, satisfaction and extra effort. Effectiveness is nurtured for success, when efficient leaders exceed their settled goal. Satisfaction is a widespread factor as it relates to the success of the organization, when leaders and their subordinates are satisfied to work with each other and make success possible (Nissinen 2001). Extra effort refers to subordinates’ capacity to voluntarily increase their performance due to their commitments and encouragement by leaders.

The fundamental ideas of transformational leadership and the transformational leadership model offer a conceptual framework for the SCM, which will be presented in further detail in the next section.

2.2 The sand cone model of transformational leadership

Takala et al. (2005, 2006, 2008b) developed and constructed a normative SCM, based on the original sand cone cumulative capability model of Ferdows and De Meyer (1990). This model is a specific concept that has multidimensional or hierarchical aspects in order to visualize the structure of leadership behaviours. It is worth noting that the variables of the model are similar to those proposed by Nissinen (2001, 2004), but the data collection process, data analysis and actual definition, as well as the research instrument, were based on a different approach (Takala 2013: 71; Takala et al. 2005, 2006, 2008). Figure 4 present the SCM of transformational leadership behaviour.

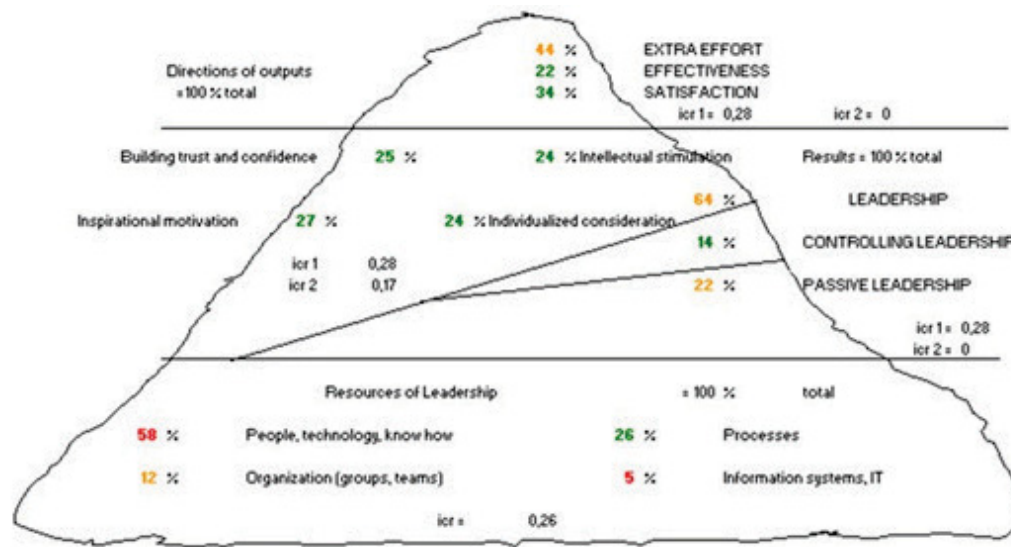


Figure 4. SCM of transformational leadership (Takala et al. 2005, 2008b)

This conceptual sand cone consists of four main components. Firstly, the highest level is the “directions of outputs”. The next level on the left refers to the “cornerstones” of transformational leadership, while “results” are on the right. The “resources” are at the ground level of the model (Takala et al. 2008b). Each component contains different elements. Takala, Kukkola and Pennanen (2008) and Takala et al. (2008b) explained, in their findings that, “*for each variable [element] there has been defined an optimal value, which should give the most balanced leadership. In theory, the optimal balanced leadership will be found when directions of outputs (each 33%), cornerstones (each 25%) and resources (each 25%)*” (Takala et al. 2008; Takala et al. 2013: 78). This distribution was defined according to idealization theory and introduced as follows:

- The “resources” component is at the ground level, which is formed by four elements: processes (PC); people, technology and know-how (PT); information systems (IT); and organizational groups and teams (OR). These four elements are built, based on the explanation that, when new tasks are given in new situations or new conditions, we first need an increase in people, technology and know-how, then processes, followed by organization and finally an increase in information systems.
- The “cornerstones” component consists of four elements: building trust and confidence (BT); inspirational motivation (IM); intellectual stimulation (IS); and individualized consideration (IC). These four

elements are the basic ideas of transformational leadership according to Burns (1978) and Bass (1985) and the transformational leadership model, as shown above.

- The “results” component consists of three elements: dynamic leadership (DL); controlling leadership (CL); and passive leadership (PL). Why is dynamic leadership needed? It is needed because the world has become more complex, and dynamic times require dynamic, driven leaders (Williams 1998) who can lead with courage, passion and vision (Duffy 2006). Progen (2013) explains that dynamic leadership is dual-focused on both subordinates and the situation of leadership, which allows a leader to react to changes by being proactive. Dynamic leadership accepts diversity and enables leaders to be effective leaders, and is a source of organizational creativity and innovation. In contrast, passive and controlling forms of leadership are the least effective, as they are associated with lower perceived support, weaker organizational identity, less citizenship behaviour and greater workplace incivility (Harold and Holtz 2014). Dynamic leadership plays a crucial role: the optimal balanced value defined for dynamic leadership is 82% and, for the controlling and passive leadership styles, it is 9% each (Ha-Vikström and Takala 2016).
- The “direction of outputs” component on the top of the sand cone consists of three types of accomplishment: effectiveness (EF); satisfaction (SA); and extra effort (EE). These accomplishments are the main foundation of the ‘prospector, analyser and defender model’, as invented by Takala, Kukkola and Pennanen (2008a). Extra effort (EE) equates to “prospector” (oriented towards the future and extra effort); effectiveness (EF) equates to “defender” (oriented towards current results, less effort concerning the future); and satisfaction (SA) equates to “analyser” (oriented between prospector and defender).

This conceptual and theoretical model was constructed by Takala et al. (2005, 2006a, 2006b, 2008b) in the course of a longitudinal empirical study. In light of the many studies on this model since then, one can still criticize the vague concept of “the given optimal values (cornerstones 25% each, or direction of outputs 33% each) for a balanced leadership”, because, if there is such an optimally balanced leadership model, these optimal values can be assumed to be strongly context- and case-dependent.

2.2.1 Analytic Hierarchy Process

The AHP is a multicriteria decision-making system based on mathematics and psychological concepts. It plays a crucial role in the construction of an SCM of transformational leadership, as the AHP-based questionnaire is used in this context. The AHP was innovated by Thomas L. Saaty in 1970 and has been significantly studied and improved since then. Saaty (1980: 17) describes the AHP as:

“a method of breaking down a complex, unstructured situation into its component parts, arranging these parts or variables, into hierarchy order; assigning numerical values to subjective judgments on the relative importance of each criterion, and synthesizing the judgments to determine which variables have the highest priority and should be acted upon to influence the outcome of the situation.”

In brief, the AHP helps the decision maker to set priorities in complex situations by synthesizing the results. Nowadays, it is a methodology with broad usage around the world for a variety of decision-making purposes in fields such as business, healthcare, shipbuilding, education and government (Saracoglu 2013; Dalalah et al. 2010; Khatrouch et al. 2014; Deniz and Metin 2009).

Figure 5 presents an example of an AHP hierarchy.

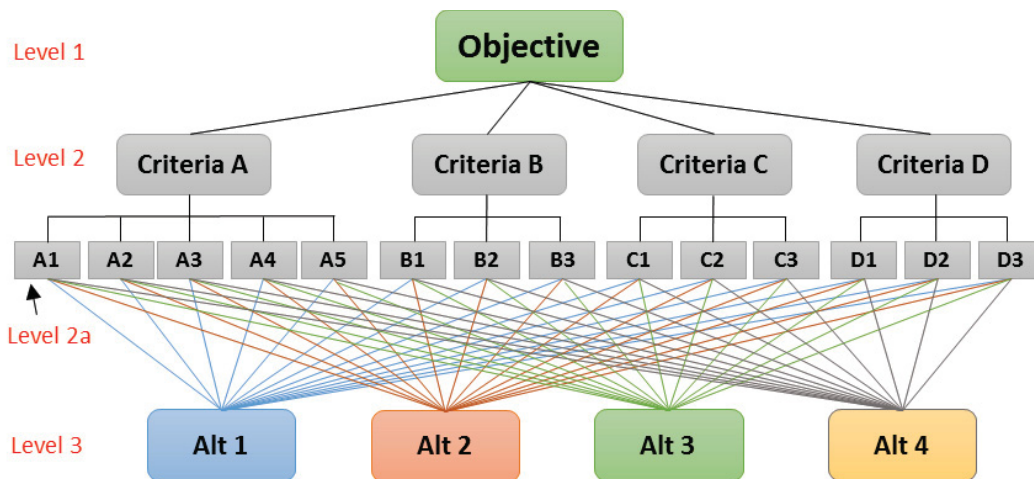


Figure 5. The AHP hierarchy structure (Adapted from Wikipedia.org)

Level 1 is the objective of the analysis, level 2 is the multicriteria/-factoral level. Each criterion can contain several subcriteria (level 2a), while the last level refers to the alternative of choices.

A simple example of an AHP-based questionnaire without subcriteria is illustrated in Figure 6. The objective of the analysis is to “select a leader”. The factors or criteria to be considered in this example are: A) credibility, B) experience, C) education, and D) leadership skills. Six pairwise comparisons are created: A compares with B, A compares with C, A compares with D, B compares with C, B compares with D, and C compares with D. The black dot in the line of each pair (Figure 6) is the judgement of the decision maker/voter based on his/her preference. On a scale from 1 to 9, 1 in the middle of a factor in a pair means “equally important”. The closer to the A factor the voter gets when selecting or judging means that factor A is more important than B, and vice versa. In this example, all digits (1 to 9) are not visible, as in the real questionnaire.

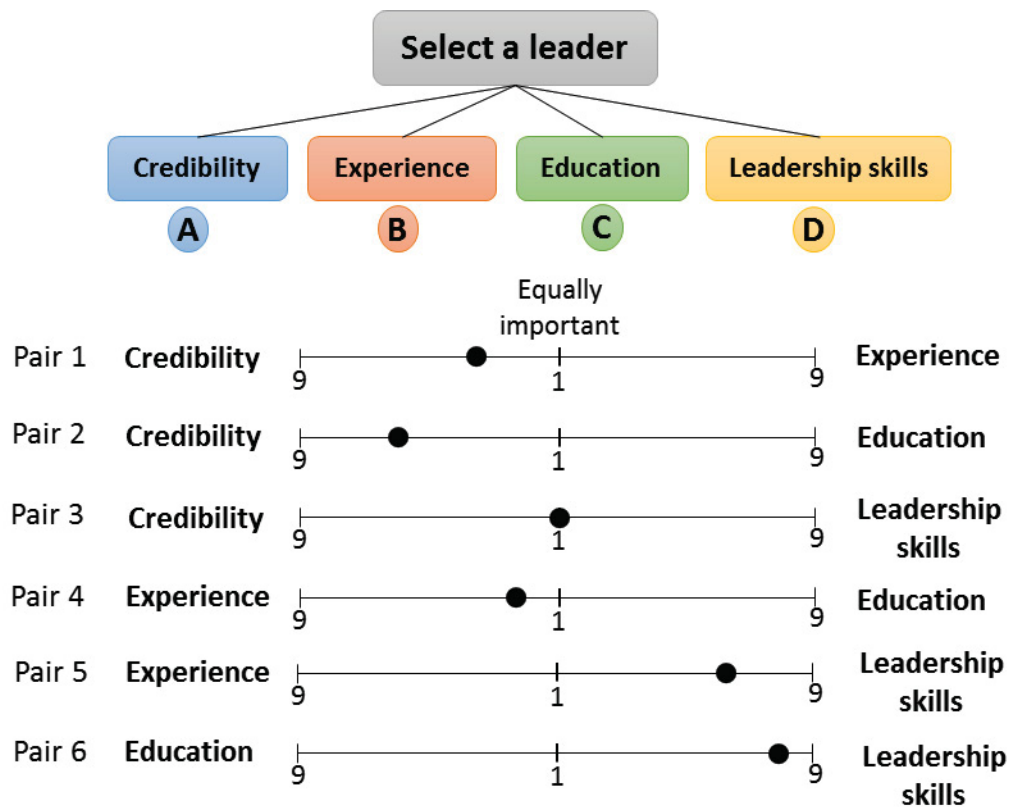


Figure 6. An example of AHP-based questionnaire

The judgement by the voter (Figure 6) will be added in the Expert Choice software, which implements the AHP, where a quantitative value will be calculated and providing two results. The first result is the consistency ratio (CR), in this example $CR = 0.026$, which is lower than 0.1 that is considered as reliable (Saaty and Vargas, 2005) and can be analysed further. The second result is the priority result as shown in Figure 7. In this example, the first priority to select a leader is Leadership skills (48.5%), the second priority is Credibility (36.2%), the third is

Experience (9.8%) and the last priority is Education (5.5%). This is the first part of the long and complex AHP analysis process.

Resulting Priorities

Category	Priority	Rank
1 Credibility	36.2%	2
2 Experience	9.8%	3
3 Education	5.5%	4
4 Leadership skills	48.5%	1

Figure 7. Resulting priorities example

In the first three publications (1, 2 and 3), the AHP principle was used in the design of the questionnaire (30 pair questions/statements) and analysis of the weight of different leadership behaviours based on respondents' evaluation. As was explained, Expert Choice software was used to calculate the consistency, which reduces the biases that respondents may have in their decision-making process when answering. The Expert Choice tool also helped in evaluating alternatives and prioritizing objectives so that the leadership profile could be constructed. Microsoft Excel was used to calculate the leadership indexes according to the formulas presented in Publication 1.

Takala et al. (2005, 2008a, 2008b) argue that “*the results [i.e., priorities results, 48.5%, 36.2% etc.] are easiest to show as a sand cone model and the values of the variables are coloured using a traffic light technique*”. Green is good, yellow should be improved and red should be avoided. The sand cone traffic light values can be found in Appendix 1.

Analytical models for leadership indexes

During the past 10 years, many researchers (Takala et al. 2005, 2006, 2008; Liu and Takala 2010) have used the four equations (Equations 1-4) shown below to calculate the outcome index, leadership index, resource index and total transformational leadership index. However, there is a need for an elucidatory explanation of how these equations were constructed, as the absence of such an explanation may weaken the scientific credibility and validity of the equations.

Outcome index (OI) formula:

$$OI = 1 - \max\left\{\left|\frac{1}{3} - \frac{EF}{100}\right|, \left|\frac{1}{3} - \frac{SA}{100}\right|, \left|\frac{1}{3} - \frac{EE}{100}\right|\right\} \quad (\text{Equation 1})$$

EF = Effectiveness

SA = Satisfaction

EE = Extra effort

Below is an example of how to calculate the outcome index:

EF = 22; SA = 34; EE = 44 (answered by a respondent)

We apply 22, 34 and 44 to Equation 1:

$$OI = 1 - \max\left\{\left|\frac{1}{3} - \frac{22}{100}\right|, \left|\frac{1}{3} - \frac{34}{100}\right|, \left|\frac{1}{3} - \frac{44}{100}\right|\right\}$$

OI = **0.89** Answer: the outcome index is 0.89.

Leadership index (LI) formula:

$$LI = \left(\frac{DL}{100}\right) \cdot \left(1 - \frac{\max\{PL, CL\}}{100}\right) \cdot \left(1 - \left|\frac{1}{4} - \frac{\max\{IC, IM, IS, BT\}}{100}\right|\right) \quad (\text{Equation 2})$$

DL = dynamic leadership

PL = passive leadership

CL = controlling leadership

IC = individualized consideration

IM = inspirational motivation

IS = intellectual stimulation

BT = building trust and confidence

Resource index (RI) formula:

$$RI = \left(1 - \left(\frac{PT}{100}\right)\right) \cdot \left(\frac{3 \cdot \min\{PC, IT, OR\}}{100}\right) \quad (\text{Equation 3})$$

PT = people, technology, know how

PC = processes

IT = information systems

OR = organization (groups, teams)

Total leadership index formula:

$$TLI = OI * LI * RI \quad (\text{Equation 4})$$

The purpose of the author's first publication was to pursue and validate the SCM, as well as test it in a business environment, which has not been done before. During the examination and validation process, some discrepancies were found in the formulas (Equations 1-4) presented above. The discrepancies appeared for two reasons:

- a) The max and min functions used in the formulas – For example, in the three values (6, 45 and 49), 6 is the min value and 49 is the max value. In the formula using max, 49 is taken into account, while 6 and 45 are ignored. In the formula using min, 6 is taken into account, while 45 and 49 are ignored. Therefore, the correctness of the total result can be violated.
- b) There is no defined optimal/best index for each old formula – For example, when applying optimal values to the old RI equation, we get: RI = 0.56; optimal LI = 0.75; optimal OI = 1.00; and optimal total leadership index TLI = 0.42. Surprisingly, one informant can get RI = 0.57, which is higher than the optimal index that can be obtained by an informant. This means the validity of the mathematical model is violated. Furthermore, due to the fluctuation in the four optimal indexes, the comparison of indexes between different participants is much more difficult.

Therefore, Publication 1 offers a more accurate formula by calculating the “absolute value” (ABS) for each variable instead of using max or min. The absolute value used for every weight shows the distance between current performance and the optimal performance, without a negative value.

Five equations for measuring leadership behaviour (presented in Publication 1) are: 1) specific index (SI), 2) resource index (RI), 3) outcome index (OI), 4) leadership index (LI), and 5) total transformational leadership index (TLI). In order to ensure the validity of the mathematical model, and explicitly for all evaluation as well as comparison purposes, the author has determined 1.00 to be the highest index and 0.00 to be the lowest index for every new formula shown below.

$$TLI = 1 - \frac{\sum \text{Absolute difference values}}{\sum \text{Optimal values}} \quad (\text{Equation 1})$$

Note: absolute difference value = respondents' answer value - optimal value (see Table 3 for an explanation)

Optimal value: IC = IM = IS = BT = 25
 PC = PT = IT = OR = 25
 EF = SA = EE = 33.3
 DL = 82, CL = PL = 9

$$\text{Specific index} = 1 - \left(\frac{\text{Absolute difference}}{\text{Maximal difference}} \right) \quad (\text{Equation 2})$$

Note: Maximal difference EF = SA = EE = (100 - 33.3) = 66.7

Maximal difference IC = IM = IS = BT = (100 - 25) = 75

Maximal difference PL = CL = 91;

Maximal difference DL = 82

Maximal difference PC = PT = IT = OR = (100 - 25) = 75

OI = outcomes index

$$OI = \text{Mean} (\text{Specific index} \{EF, SA, EE\}) \quad (\text{Equation 3})$$

Mean = a calculated central value of Specific index of EF, SA and EE

LI = leadership index

$$LI = \text{Mean} (\text{Specific index} \{IC, IM, IS, BT, PL, CL, DL\}) \quad (\text{Equation 4})$$

RI = resource index

$$RI = \text{Mean} (\text{Specific index} \{PC, PT, IT, OR\}) \quad (\text{Equation 5})$$

Table 3, as well as the following formulas, presents an example of how to calculate the total leadership index, specific index, outcome index, leadership index, resource index and total transformational leadership index.

Table 3. An example of how to calculate indexes

TL components and factors	Optimal values	Response values	Absolute difference	TLI	Specific index	OI	LI	RI
Directions of outputs								
Effectiveness EF	33.33	12.20	21.13		0.68			
Satisfaction SA	33.33	32.00	1.33		0.98			
Extra Effort EE	33.33	55.80	22.47		0.66			
Cornerstones								
Individualized consideration IC	25.00	30.40	5.40		0.93			
Inspirational motivation IM	25.00	29.00	4.00		0.95			
Intellectual stimulation IS	25.00	20.30	4.70		0.94			
Building trust and confidence BT	25.00	20.30	4.70		0.94			
Results								
Passive leadership PL	9.00	26.00	17.00		0.81			
Controlling leadership CL	9.00	11.00	2.00		0.98			
Dynamic leadership DL	82.00	63.00	19.00		0.77			
Resources								
Process PC	25.00	13.40	11.60		0.85			
People, technology, know-how PT	25.00	48.40	23.40		0.69			
Information system IT	25.00	15.50	9.50		0.87			
Organisation (group, teams) OR	25.00	22.80	2.20		0.97			
Total	400.00		148.43	0.63		0.78	0.90	0.84

$$TLI = 1 - \frac{\sum \text{Absolute difference values}}{\sum \text{Optimal values}} = 1 - \frac{148.43}{400} = \mathbf{0.63}$$

$$\text{Specific index of EF} = 1 - \left(\frac{\text{Absolute difference}}{\text{Maximal difference}} \right) = 1 - \frac{21.3}{66.7} = \mathbf{0.68}$$

$$OI = \text{Mean (Specific index \{EF, SA, EE\})} = \text{Mean (0.68, 0.98, 0.66)} = \mathbf{0.78}$$

$$LI = \text{Mean (Specific index \{IC, IM, IS, BT, PL, CL, DL\})}$$

$$LI = \text{Mean (0.93, 0.95, 0.94, 0.94, 0.81, 0.98, 0.77)} = \mathbf{0.90}$$

$$RI = \text{Mean (Specific index \{PC, PT, IT, OR\})} = \text{Mean (11.6, 23.4, 9.5, 2.2)} = \mathbf{0.84}$$

It is worth noting that the new version of the SCM of transformational leadership provides not only an effective measuring method, but also a fresh perspective on the theory of how culture, gender, education, working experience or financial status might impact on the effectiveness of transformational leaders. This new

theory was presented in Publication 3, which can be found in the second part of the dissertation.

2.3 Different dimensions of leadership behaviour

According to Bass (1990), since the 1940s, research on leadership began to analyse the effects of certain leadership behaviours, mainly task-oriented (Fleishman 1953a; 1953b; Halpin 1954; Stogdill and Coons 1957; Stogdill 1963; Bowers and Seashore 1966; House 1971; Bass 1990; Griffin and Ebert 2010; Anzalone 2012) and relationship-oriented behaviour, which is also known as people-oriented leadership (Fleishman 1957; Blake and Mouton 1964; Bass 1967; Anderson 1974; Fiedler and House 1988; Johannsen 2012). The two dimensions, people- and task-oriented leadership behaviours, have been widely studied and compared (Burke et al. 2006; Sahertian and Soetjipto 2011; Gartzia and Baniandrés 2016).

In general, relations-/people-oriented leadership behaviour focuses on human relations, increasing mutual trust and building commitment in a team. In contrast, task-oriented behaviour is primarily concerned with production activities or concentrates on the performance of the task assigned to the team (Mullins 2008; Künzle 2010). Many researchers have studied this same behaviour over past decades. The key problem is that many and varied titles have been used to categorize task-oriented leadership behaviours; some of them are similar and some of them are dissimilar. For example, task-orientation can be referred to goal achieving (Cartwright and Zander 1960), goal emphasizing (Bowers and Seashore 1966) or initiating structure (Hemphill 1950).

In parallel with this, Bass and Avolio (1995, 1997) also presented a third dimension, known as laissez-faire or inactive leadership behaviours, which are in fact non-relations- and non-task-oriented. Table 4 presents a brief survey of previous research on leadership behaviour.

Table 4. Previous research on leadership behaviours at a glance

Category	Authors	Focus
Relations-oriented leadership behaviours	Hemphill (1950)	Consideration of well-being and contributions of followers
	Fleishman (1957)	Emphasizing employee needs
	Blake and Mouton (1964)	Concern for people
	Mann (1965)	Human relation orientation
	Bowers and Seashore (1966)	Facilitative and supportive interaction
	Anderson (1974)	People-centred
	Ouchi (1981)	Participatory decision-making
	Misumi (1985)	Building mutual trust and democratic processes
	Bass and Avolio (1995, 1997)	Idealized influence, individualized consideration, intellectual stimulation, and inspirational motivation
	Griffin and Ebert (2010)	Prioritize the welfare of everyone in a team
Task-oriented leadership behaviours	Conger (2011)	Encouraging interaction within teams
	Hemphill (1950)	Initiating structure
	Katz, Maccoby and Morse (1950)	Production
	Fleishman (1951)	Defining group activities
	Fleishman (1957)	Production emphasizing
	Cartwright and Zander (1960)	Goal achieving
	Blake and Mouton (1964)	Concerned with production
	Bowers and Seashore (1966)	Goal emphasizing
	Reddin (1977) Zaleznik (1977)	Autocratic and management behaviours
	Indvik (1986)	Achievement-oriented
Non-relations-oriented and non-task-oriented	Bass and Avolio (1995, 1997)	Laissez-faire, avoidance of making decisions

However, Antonakis and House (2014), who introduced and developed the instrumental leadership model, have argued that the people- and task-oriented behavioural dimensions “fail to consider the strategic monitoring and formulation roles of leaders” (2014: 6). In addition, Yukl (1999, 2008) also reported certain

omissions in the task-oriented behaviour of Bass' theory. Furthermore, in terms of process-oriented behaviours, even Harrington (2011) suggested that, if people are the heart of the organization, then processes represent the brain. This important path (business process-oriented leadership behaviour), as well as the combination of three other paths (people, process and goal), remains unexplored.

As Srikumar Rao, a TED Talk speaker and the author of *Happiness at Work*, articulated in 2010:

“We live in a world where what we [people] think of, what we invest in, is the outcome [goal]. We define our life in the following way: here I am, here is where I want to go, these are the steps [process] I have to take in order to get from where I am to where I want to go, and if I succeed, life is wonderful. And if you don't succeed, still wonderful, because now you have a new starting point, and from that new starting point, you select another outcome and keep going.”

It is the aim of this research to explore leadership behaviours, which are perceived or experienced by different levels of leaders/managers in an organization, in order to gain greater insight into how leaders and managers focus on three central areas in a business environment: people, process and goal. People create and design the working process in order to achieve a goal; as Harrington (2011: 122) emphasizes, *“the process is brought to life by people, our people make the process work, without them, we have nothing”*. Figure 8 shows the key focus areas of leadership behaviour.

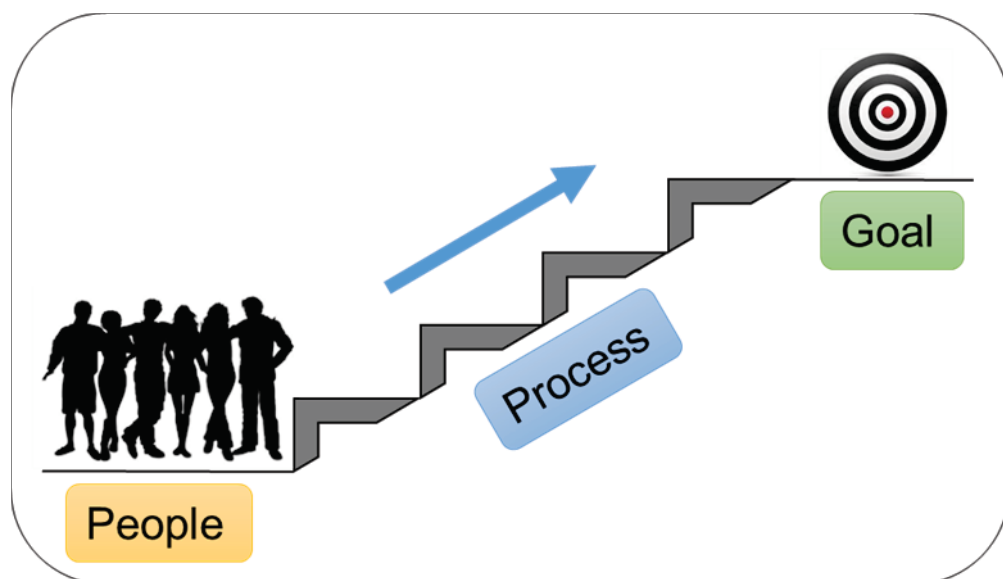


Figure 8. Essential focus areas of leadership behaviour

In brief, the conceptual framework of this dissertation incorporates different partial elements borrowed from leadership theories, the transformational leadership model, and the SCM of transformational leadership, as well as different dimensions of leadership behaviour. These varying theoretical perspectives are useful and enrich our understanding of organizational phenomena (Hitt et al. 2007), together with deepening our insight into leadership behaviour.

3 RESEARCH DESIGN AND METHODOLOGY

This chapter presents the selected philosophical positions that underline the research approach, strategies and research methods adopted in this dissertation, as well as the validity and reliability of the study.

As background, it is useful to consider existing themes of research design. Wyk (2012) defines research design as the overall plan for connecting conceptual research problems to pertinent (and achievable) empirical research (2012: 4). The research design articulates what data are required, what methods are going to be used to collect and analyse the data, and how all this will answer the research questions (Flick 2011; Wyk 2012).

For the purpose of this dissertation, several types of research design have been studied, for example, the scheme of Burrell and Morgan (1979), which divides sociology into four distinct paradigms, namely, radical humanist, radical structuralist, interpretive and functionalist. These four paradigms are based on four dimensions: regulation vs. radical change, and subjective vs. objective. Another model, which, to some extent, is more explicit than Burrell and Morgan (1979), is the research design framework by Creswell (2009), who identifies four basic philosophical assumptions that researchers make when undertaking qualitative research. These four fundamental philosophical assumptions (ontology, epistemology, axiology and methodology), as described by Creswell (2009), were also depicted by Saunders, Lewis and Thornhill (2009) in their views on the research 'onion'. The research 'onion' comprises multiple layers demonstrating various perspectives that can be adapted for almost any type of research methodology. It describes a step-by-step process, which makes the design more explicit than in the case of the other two models, as illustrated in Figure 9.

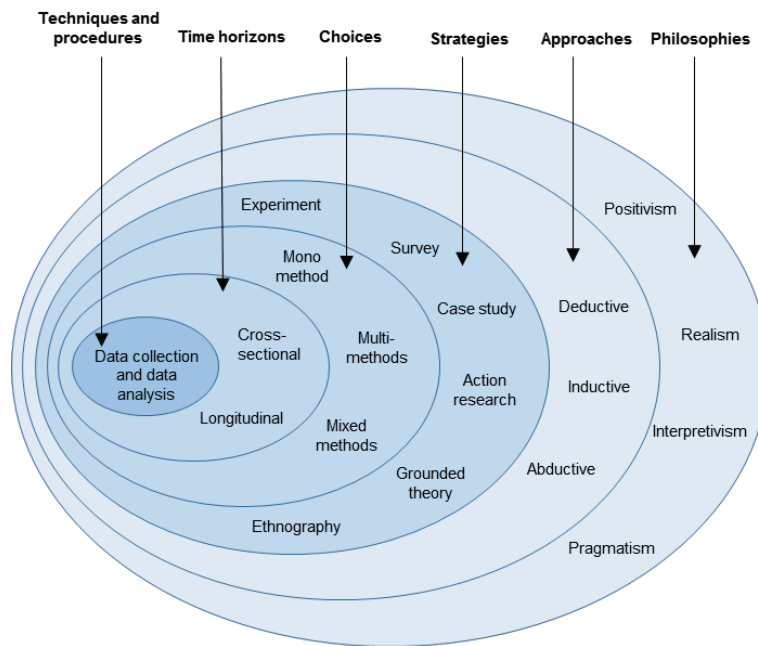


Figure 9. Research 'onion' (adapted from Saunders, Lewis and Thornhill 2009)

However, the terminologies used to name the seven layers in the research 'onion' seem to be overlapping; for example, the *strategies* layer (Figure 9) encloses *experiment*, *case study*, *survey* *grounded theory* etc. and the *choices* layer contains *mono-method*, *multi-methods* and *mixed methods*. The terms *strategies* and *choices* here do not seem to be well defined, because *mixed methods* refers to a set of methods, while a *survey* or *grounded theory* is also a method or theory, respectively. Due to such ambiguity, this study attempts to follow fundamental principles or ideas based on all three of models, rather than one, in order to answer the following questions:

- What is real in the context of this study (ontology)?
- What and how can I know reality/knowledge (epistemology)?
- What approach can I use to get knowledge (theoretical perspective)?
- What procedure can I use to acquire knowledge (methodology)?
- What tools can I use to acquire knowledge (method)?
- What data can I collect (sources)? (See Crotty 1998; Hay 2002: 64)

3.1 Research philosophies and paradigm

Each research design can contribute something unique and valuable to business and management research by representing a different and distinctive 'way of seeing' organizational realities (Morgan 1986; Saunders, Lewis and Thornhill 2009). *Paradigm* is a term frequently used in the social and behavioural sciences (Saunders et al. 2009). Research paradigms are sets of fundamental assumptions and common beliefs, agreements or frameworks supported by theories and a set of practices that guide a researcher in exploring, understanding and addressing the research problems in a research discipline (Cohen, Manion and Morrison 2011; Jonker and Pennink 2010). Therefore, the choice of research paradigm affects the ways in which social scientific research is conducted, or guides the philosophical stance, which in turn guides the choice of research methods (Wahyuni 2012; Lincoln and Guba 2000).

From that perspective, it is important to clarify the research philosophies and paradigm that were applied in conducting this study, because they substantially influenced how the researcher undertook the study in terms of framing and understanding the social phenomena (Creswell 2009; Saunders, Lewis and Thornhill 2009; Neuman 2011; Wahyuni 2012). A research paradigm can be characterized through its ontology, epistemology and methodology (Guba and Lincoln 2005). Table 5 below explains these terms and their relationship.

Table 5. Four basic beliefs of research philosophies in management research

Fundamental beliefs	<i>Positivism</i>	<i>Realism</i>	<i>Interpretivism</i>	<i>Pragmatism</i>
Ontology: the researcher's view of the nature of reality	External, objective and independent of social actors	Objective. Exists independently of human thoughts and beliefs or knowledge of their existence (realist), but is interpreted through social conditioning.	Socially constructed, subjective, may change, multiple realities	External, multiple, view chosen to best enable answering of research question
Epistemology: the researcher's view regarding what constitutes acceptable knowledge	Only observable phenomena can provide credible data, facts. Focus on causality and law-like generalisations, reducing phenomena to simplest elements	Observable phenomena provide credible data, facts. Focus on explaining within a context or contexts.	Subjective meanings and social phenomena. Focus upon the details of situation, a reality behind these details, subjective meanings motivating actions	Either or both Observable phenomena and subjective meanings can provide acceptable knowledge dependent upon the research question. Focus on practical applied research, integrating different perspectives to help interpret the data.
Axiology: the researcher's view of the role of values in research	Value-free Research is undertaken in a value-free way, the researcher is independent of the data and maintains an objective stance.	Value-laden Research is value-laden; the researcher is biased by world views, cultural experiences and upbringing.	Value-bound Research is value-bound, the researcher is part of what is being researched, cannot be separated and so will be subjective.	Value-bound Values play a large role in interpreting results, the researcher adopting both objective and subjective points of view.
Data collection methods most often used	Quantitative	Quantitative or qualitative	Qualitative	Quantitative and qualitative (mixed or multi-method designs).

Adapted from Saunders et al. (2009: 119), Lincoln, Lynham and Guba (2011), Hallebone and Priest (2009), and Wahyuni (2012: 70)

3.1.1 Ontological choices in this study

Ontology refers to researchers' assumptions about the nature of reality. Dudovskiy (2016) explains that "*in simply terms, ontology is associated with a central question of whether social entities need to be perceived as objective or subjective*". Objectivism (or positivism) and subjectivism (or constructionism) can be specified as two important aspects of ontology. Objectivists hold that the social entities exist independent of social actors. Subjectivists hold that "*social phenomena are created from the perception and consequent actions of social*

actors” (Saunders et al. 2009: 111). According to Smircich (1983) “objectivists would tend to view the culture of an organization as something that the organization ‘has’. On the other hand, the subjectivist’s view would be that culture is something that the organization ‘is’ as a result as a process of continuing social enactment” (see Saunders et al. 2009: 111). This dissertation examines the leadership behaviour and explores its key focus areas and creates measurement models for organization success. Ontologically, this dissertation follows **social constructivism**, based on the view that reality consists of social phenomena that are constructed and formed by participants or the leaders/managers. In other words, reality is created based on the perceptions, interpretations of the informants and their consciousness of the world.

3.1.2 Epistemological choices for this study

Epistemology concerns assumptions about knowledge, i.e., what we accept as being valid knowledge (Burrell and Morgan 1979; Crotty 1998; Ritchie, et al. 2013). The two main extreme epistemological stances are positivism and interpretivism. The positivists believe that meaningful realities exist apart from the operation of any consciousness, and only phenomena that are observable and measurable can be regarded as valid knowledge (Saunders et al. 2009; Sanda et al. 2012: 154). On the other hand, the interpretivists assume that knowledge is based on the perception of the individuals (Burrell and Morgan 1979). In between these extreme views is pragmatism. Pragmatists “recognise that there are many different ways of interpreting the world and undertaking research, that no single point of view can ever give the entire picture and that there may be multiple realities” (Saunders et al. 2012).

Kiridena and Fitzgerald (2006) argue that operations management is an applied field and, therefore, researchers working in this field are expected to produce readily usable knowledge. In other words, the philosophical stance taken by pragmatists helps them to understand the problem through a practical approach, which is more compatible with research in the field of management (Tilmisina 2017). Furthermore, Meredith et al. (1989: 298) emphasize that pragmatism is directly useful to operations manager, as well as being important to the management field and to industry and society in general. Based on these perspectives, this dissertation has first modified an existing theory (the SCM of transformational leadership), and also built up a new theory (the PPGM). Therefore, epistemologically, this dissertation follows **pragmatism** as the research’s objectives emphasize the practical applications and implications of ideas about leadership behaviours. The study assumes this epistemological stance

by acting on the practical application of ideas and scanning them in the context of managers' experiences by integrating both objective and subjective point of views in order to interpret the nature of knowledge, meaning and belief of the phenomena of leadership behaviour.

3.1.3 Axiology in this study

The third fundamental assumption and belief of research philosophies is axiology. Axiology is a branch of philosophy that studies judgements about values in the context of research (Saunders et al. 2009). Axiology refers to the relationship between researchers' own values, feelings and beliefs and how these influence the research process (Sanda et al. 2016). In other words, axiological assumptions incorporate questions about how we, as researchers, deal with our own values and those of our research participants (ibid.: 128). Three central philosophical thoughts describing a value system are value-free, value-laden and value-bound. The claim 'research is value-free' means that "the researcher is independent of and neither affects nor is affected by the subject of the research" (Remenyi et al. 1998: 33) and that the results are unbiased. When research is 'value-laden', this means that the researcher acknowledges that the research is subjective, according to his or her own values, and that the findings are biased. Finally, research is value-bound when "the researcher is part of what is being researched, cannot be separated and so will be subjective" (Saunders et al. 2009: 119).

In this particular study in the field of management or social sciences, the value-free role is not supported, because social and management sciences are constructed and maintained by human beings, who are in turn very much dependent on human activities and thus dealing with values. Strictly speaking, Heron (1996) stresses that our own values are the guiding reason behind all human actions.

Although knowledge derives from participants' subjective evidence, value-laden views cannot be fully supported in this research on leadership behaviour. The reason is that the author has attempted to avoid biases by openly discussing values shaping the informants' narrative, and incorporating the author's own interpretation with that of the informants. It is worth noting that these interpretations are related to the values of ethics (see the section on ethical consideration for details), as well as research validity and reliability, AS discussed in Section 3.5. Due to the fact that the author has sought to adopt both subjective and objective points of view, which are based on the quantitative and qualitative mixed methods approach in the research settings, the **value-bound** axiological

view was used in this research process, while also having played an important role in interpreting the results.

3.2 Theoretical perspective

The research approach can be found in the second layer of the research ‘onion’, proposed by Saunders et al. (2009) (Figure 9). It is concerned with how theories are used or how knowledge is gained (Saunders et al. 2007; Ritchie et al. 2013). Theories are either tested deductively (often quantitative) or built up inductively (qualitative) (Sanda, Anigbogu and Molwus 2016), or incorporate existing theory where appropriate to build new theory or modify existing theory (abductive reasoning) (Saunders et al. 2009).

In *deductive* reasoning (top-down approach), a conclusion is reached logically in a binding manner from the premises to the conclusion. On the contrary, in *inductive* reasoning (bottom-up approach), a conclusion is derived from individual observations to broader generalizations and theories (ibid.; Ritchie et al. 2013). *Abductive* reasoning is a form of logical inference, which starts with the identification and examination of symptoms, then seeks to find the simplest and most likely explanation. Abduction is thus also referred to as ‘inference to the best explanation’ (Elliott 2013: 28)

In this particular study, in the first three publications (1, 2 and 3), the theories are tested deductively using the quantitative data collected by a questionnaire, with a new theory created due to certain discrepancies found in the existing theory. This means that knowledge is gained through abductive reasoning. In Publications 2 and 3, the new theory is tested deductively among a larger number of participants. Meanwhile, in the fourth publication, a new theory is generated based on existing theories, while using both quantitative and qualitative data, which means this study acquired knowledge via abductive reasoning. In the last publication, new data are not required, as this paper only compares the two outcomes from the four previous publications. In brief, this study genuinely represents the **abductive** research approach, as the study begins with an investigation into existing theory, then tries to find the best explanations for the phenomenon of leadership behaviour.

3.3 Research methodology

The term **research methodology** refers to the theory of how research should be undertaken or how a researcher obtains knowledge of phenomena. Methodology is also a vital element in a paradigmatic foundation (Saunders et al. 2009; Tronvoll et al. 2011). On the other hand, the term **methods** refers to techniques and procedures used to obtain and analyse data (Saunders et al. 2009), for example, conducting interviews, surveys or experiments. Meanwhile, methodology involves the acquisition of knowledge, the justification and the explanation of why various tool and techniques were used in conducting research.

In order to answer the research questions that follow on from the research strategies, we can either use a single data collection technique (mono-method) and corresponding analysis procedures, or use more than one data collection technique and analysis procedure (multi-method) (ibid.: 151). The general term *mixed method approach* is used when both quantitative and qualitative data collection techniques and analysis procedures are involved, “either at the same time (parallel) or one after the other (sequential) but does not combine them” (ibid.: 152). In this dissertation, the mixed methods strategy was chosen and guided by research questions and research objectives mentioned in the introduction chapter. As this dissertation consists of five publications focusing on areas of leadership behaviour, it is important to explain the technique and procedure adopted in conducting each study.

The first publication takes a quantitative approach. The purpose of this article is twofold: firstly, to pursue and validate the existing transformational leadership SCM (a model allowing for a simple direct measurement of transformational leadership profiles) by testing it in a new environment; secondly, to examine the direction of transformational leadership capabilities for middle-level leaders in a multinational company. The proposal is based on the existing SCM, and applies a descriptive and normative approach with deductive reasoning and analytic claims. The mono-method, which was chosen for this publication, combines a quantitative data collection technique (questionnaire) with quantitative data analysis procedures to answer the research questions. The data for this paper were collected using an AHP-based questionnaire. The participants comprised 26 middle managers working in four different business units in a global company, located in Finland in 2015.

The second publication also employs a quantitative research method. The purpose of this article was to validate and verify the new SCM proposal, which is one of the outcomes of the first publication. The data were analysed using the AHP tool and

new SCM equations, following deductive reasoning and analytic claims. In the same manner as the first publication, the required data for Publication 2 were also collected using an AHP-based questionnaire. The participants comprised 86 middle managers from four different business units, located in 21 different countries in 2015 and 2016.

The third publication follows, to a great extent, the same settings as the second, i.e., a quantitative method and deductive reasoning. The purpose of this article was to investigate how different internal and external factors, such as culture, gender, education, working experience or financial status, might influence the effectiveness of transformational leaders. This third publication used the same data acquired from Publication 2, i.e., from 86 middle managers from four different business units, located in 21 different countries in 2015 and 2016.

The main aim of the fourth publication was to explore leadership behaviours as perceived or experienced by different levels of leaders/managers in a global company. In this publication, methods with three independent sources (triangulation), i.e., in-depth interview (qualitative), questionnaire (quantitative) and observations (qualitative), were adopted in order to corroborate the research findings and enrich our understanding of organizational phenomena. These data were thematically analysed, following inductive reasoning and normative claims. The participants involved in this publication comprised 20 managers across different organizational levels in 2016 and 2017.

The purpose of the fifth publication was to evaluate and self-criticize the two outcomes from the four previous publications, i.e., the SCM of transformational leadership and the PPGM. For that reason, this paper did not require new data, as it only compares and identifies the major benefits and limitations of the models and how they could be combined and prioritized.

To summarize, this dissertation is an assimilated summary of five publications, following **both qualitative and quantitative methods**, as an embedded case study. The appropriate philosophical stance adopted in this dissertation is **pragmatism** with an **abductive** approach, supported by both deductive and inductive reasoning, as well as normative claims (empirical and descriptive behaviour and outcomes).

3.3.1 Justification for adopting a case study approach

A case study is “a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real-life context using multiple sources of evidence” (Robson 2002: 178). There are many strategies for carrying out research, such as experimental, survey, grounded theory or action research. A brief summary of some of the basic method is provided in Table 6 below:

Table 6. Summary of basic methods

Theories	Descriptions
Experimental	This strategy is adopted in answering the ‘how’ and ‘why’ questions when control and or comparison of behavioural event is required.
Survey	This method is a popular and common strategy in business and management research most used to answer ‘who, ‘what’ ‘where’, ‘how many’ and ‘how much’ questions. It is normally used in deductive approach.
Case study	A research inquiry in which the researcher explores in depth a program, event, activity, process, or one or more individuals. It is applied when a research addresses either a descriptive question (<i>What</i> happened?) or an explanatory question (<i>how</i> or <i>why</i> did something happen?).
Grounded theory	A research inquiry in which the researcher derives a general, abstract theory of a process, action, or interaction grounded in the views of participants.
Ethnography	A research inquiry in which the researcher studies an intact cultural group in a natural setting over a prolonged period of time by collecting, primarily, observational and interview data. The researcher is also regarded as part and parcel of it in order to enable extensive observation and explanation of the phenomenon.
Action research	A strategy adopted with the purpose of providing a tentative solution to an existing problem. It is seen as participatory in nature as the researcher is directly involved; knowledge and theory are thus advanced by learning.
Constructive research	A pragmatic rigorous methodological approach, a productive solution to solve practical problems while generating academically theoretical contributions.

Source: Author’s understanding based on Yin (2006), Collis and Husey (2003), Creswell, (2009), Saunders, Lewis and Thornhill (2009), Taggart, Koskela and Rooke, (2015), Sanda et al. (2016) and Lehtiranta et al. (2015).

Yin (2014) argues that implementing a case study is a suitable method in a situation where the main research questions are “how” or “why” questions, especially when the researcher has little or no control over behavioural events and the focus of the study is a contemporary phenomenon. Yin (2003) also distinguishes four case study strategies, based upon discrete dimensions: single case vs. multiple case; and holistic case vs. embedded case.

A case study strategy can involve either a single case or multiple cases (more than one case). A holistic case study refers to research concerned with a single organization as a whole. Conversely, an embedded case study is when research examines a number of departments/business units or work groups within a single organization. A single-case study can be utilized when a case represents an extreme or unique case (Saunders et al. 2009). A multiple-case study makes it possible to draw conclusions from a set of cases and is useful for examining phenomena that might occur in a variety of situations (Gagnon 2010). Case studies can be categorized for cross-sectional and longitudinal research. Cross-sectional studies research a phenomenon at a particular time (Saunders et al. 2009; Hair et al. 2015), whereas longitudinal research studies research a phenomenon over time.

However, case study research is subject to criticism; for example, Yin (2011) argues that case studies are vulnerable in the case of positivist research, because it may not have the rigour of natural scientific designs, while specific cases rarely allow for generalizations to the general population (Easterby-Smith, Thorp and Jackson 2012).

In response to the criticism, Sanders et al. (2009) insist that a case study strategy can be a worthwhile way of exploring existing theory and also provide a source of new research questions. As in the case of this study,

“the strength of case study research strategy lies in the capacity for in-depth study of complex social phenomenon in real-life settings. Case study research provides an opportunity to gather first-hand experience using a variety of data collection methods, and is based on establishing long term relationships between the researcher and the research participants.”
(Greenaway 2011)

From a similar perspective, Siggelkow (2007) argues that case studies are particularly valuable for demonstrating the importance of particular research questions, for inspiring new ideas and for illustrating abstract concepts. Moreover, this author (2007) insists that even single cases can provide highly convincing tests of theory by quoting the famous ‘talking pig’ example (see also Easterby-Smith et al. 2012).

Based on what is being explained, this dissertation is a multiple-case study because the samples for analysis were collected from four different business units (see Publications 1, 2, 3 and 4), and the participants were located in 21 different countries (see Publications 2 and 3). Each of these case study is interconnected with a theoretical framework. Furthermore, this research is also an embedded case

study since the study included four different cases within a global organization, i.e., “the first case occurs in the other cases, and, as consequence, the need to generalize from these findings” (Saunders et al. 2011: 146).

The thesis is a cross-sectional study as the research data were collected at a particular time. Importantly, the data, which were mainly sourced by survey, interviews and direct observation by the author, were systematically recorded and archived. The author strictly followed the scientific conventions (i.e., significant figures, formula and units, data in graph and table form etc.) used in social sciences. These sets of procedures represent a chain of evidence for different practical solutions. In other words, this case study research used evidence from multiple sources to reveal the complexity of real-life situations. From this perspective, the study provided unique and comprehensive information about leadership behaviour in management areas.

To conclude, the embedded case study was the best fit for this research: it is a viable method to bring out implicit and explicit data on the subject of leadership behaviour. The cases were unique and provided the author with the opportunity to collect, observe and interpret the insights and opinions of individual informants (hermeneutics) into a cohesive whole. Consequently, this increased confidence in the research data and conveyed a clearer understanding of the research problem (see Jackson and Parry 2011), which has not been previously considered.

Alternatively, with regard to the constructive research approach (a pragmatic rigorous methodological approach, or a productive solution to solve practical managerial problems, while generating academically theoretical contributions; see Lehtiranta et al. 2015), the author has retrospectively considered this conceptualization and compared the six main phases of constructive research theory by Lehtiranta et al. (2015) with the six steps of ‘case study’ research theory. Table 7 presents a comparison of these two methodology theories.

Table 7. A comparison of case study theory and constructive research theory.

Step/ Phase	Case study theory (Yin 1984)	Constructive research theory (Lehtiranta et al. 2015)
1	Determine and define the research questions.	Understand the context and selecting a problem.
2	Select the cases and determine data gathering and analysis techniques.	Understand the study area.
3	Prepare to collect the data.	Designing one or more solutions.
4	Collect data in the field.	Demonstrating the solution's feasibility.
5	Evaluate and analyse the data.	Validation of the results.
6	Prepare the report.	Generalising the results.

As shown in Table 7, except for Step 4, which is somewhat divergent (i.e., 'Collect data in the field' vs. 'Demonstrating the solution's feasibility'), the procedural steps/phases are relevantly similar in both approaches.

Nevertheless, the construction of the PPGM from Publication 4 in this dissertation is meticulous in line with the ideas about the constructive research approach (Kasanen et al. 1993). As Lehtiranta et al. (2015) argue, by combining existing theories with real-world problems (as accomplished in Publication 4), the aims of constructive research are achieved. Furthermore, according to these (ibid.) authors, this constructive research approach offers significant potential in bridging some of the gaps between academic research and practice, especially in management accounting research (Kasanen et al. 1993) or project-based operation research (Oyegoke 2011), and model design for the virtualization of construction companies (Alsakini 2012).

A clear conclusion in hindsight from this study is that constructive research, in combination with the case study approach, would have been a worthwhile conceptualization for this dissertation research process.

3.4 Data collection and data analysis

Data collection and analysis techniques are at the centre of Saunders et al.'s (2009) research 'onion' (Figure 9), and include selecting cases, data gathering, measuring and observing, analysing and reporting results (Creswell 2009;

Saunders et al. 2009). More implicitly, they refer to how a researcher selects quantitative and/or qualitative techniques and procedures for a particular research project (Sanda et al. 2016; Saunders et al. 2009). In all kinds of research, the terms *quantitative* and *qualitative* are used widely to differentiate between data collection techniques and data analysis procedures (ibid.).

As previously stated, this dissertation is composed of five publications, where each publication includes primary data collected by the author. The quantitative data in the first three publications (1, 2 and 3) were collected via a self-administered questionnaire, i.e., the respondents completed and administered the questionnaire electronically over the Internet. According to Saunders et al. (2009), respondents to self-administered questionnaires are relatively unlikely to answer simply to please the researcher (ibid.: 363) or according to social desires (Dillman 2007). Thus, this technique should increase the reliability of responses. Furthermore, the questionnaire is based on the AHP concept, a multicriteria decision method constructed through pairwise comparison questions, which help in disqualifying inconsistent responses (see Section 2.2.1 for details). As may be expected, graphs and statistics were utilized for data analysis procedures in these three publications (Publications 1, 2 and 3 for details) in order to clearly introduce the key points of each finding.

Meanwhile, in Publication 4, besides the self-administered questionnaire to discover participants' attitudes, this paper was further complemented by in-depth interviews and observations. The interviews allowed the participants to freely express their own perspectives, whereas the observations played an extra role in strengthening the facts based on the data collected from the questionnaire and the interviews. The coding and categorizing of data were conducted as part of the qualitative data analysis procedure for this publication (see Publication 4 for details). In Publication 5, as mentioned before, new data were not required as its aim was to compare and self-critically evaluate two leadership behaviour models, based on the author's previous publications.

Bartunek and Louis (1996) and Easterby-Smith et al. (2012) suggest that methods should combine insider and outsider perspectives in order to gain better insights into management and organizational research. In response to that, the first three publications in this dissertation were conducted by a research team, comprising people working inside and outside the organization. The fourth publication was conducted by the researcher working inside the organization; however, this paper utilized the mixed methods approach, to help enhance the opportunity "to

challenge and extend conventional wisdom and to generate new insights into human behaviour” (Easterby-Smith et al. 2012: 51) and organizational life.

3.5 Reliability, validity and ethical considerations

Reliability and validity refer to the quality and trustworthiness of the research, respectively. For, Bryman and Bell (2015), **validity** concerns the integrity of the conclusions generated from a piece of research, and **reliability** is the degree to which the measure of a notion is stable. Similarly, Easterby-Smith et al. (2008) note that reliability refers to the extent to which data collection techniques or analysis procedures yield consistent findings.

When assessing the validity and reliability of a study, Bryman and Bell (2015) suggest applying different criteria to quantitative and qualitative research. For example, in order to deal with case study validity and reliability, Yin (2014) and Dubois and Gibbert (2010) propose four tests: a) construct validity, b) internal validity, c) external validity and d) reliability (see Figure 10).

1. **Construct validity** refers to how well a researcher can generalize from measurement questions in relation to the studied construct. To enhance construct validity in this study, the author established a chain of evidence by using multiple sources, such as utilizing the AHP-based questionnaire adopted in Publications 1, 2 and 3. The AHP concept provides a technique to check the consistency of respondents' evaluation; consequently, it reduces the biases that respondents may have during the answering process. In addition, this questionnaire included six extra questions in order to check the possible inconsistencies in the answers.

Furthermore, a control test was generated for each equation in Publication 1, 2, 3 and 4. In all publications, multiple evidence was additionally obtained by illustrating the theoretical concepts through properly appropriate citations. As this research was in the field of leadership or social human nature, the author also paid particular attention to other major threats concerning construct validity; for example, in Publication 4, since most human beings want to look good and sound smart, the interview was conducted in parallel with a questionnaire and observations (triangulation data technique). Moreover, the author applied the 'quantitizing' technique proposed by Miles and Huberman (1994) to convert the qualitative data into numerical responses in order to ensure the construct validity.

- Internal validity** seeks to establish a causal relationship, whereby certain conditions are believed to lead to others. To increase internal validity in Publications 1, 2 and 3, the inconsistency ratio of 0.3 was only defined to select qualified answers. In relation to the questionnaires, the author recognized that the questionnaire actually represented reality, i.e., the respondent interpreted the questions in the same way as the author intended. Furthermore, in the data analysis phase, in order to control for the validity of the statistical results, the author measured the intercorrelation values within independent and dependent variables (see Publications 1, 2 and 3 for details about correlation coefficients acquired from intercorrelation analysis). In addition, during the sample selection phase, the author attempted to obtain a relatively equal number of participants from each business unit. In Publication 4, internal validity was achieved through data triangulation, with both quantitative and qualitative methods adopted to increase the credibility of the results.

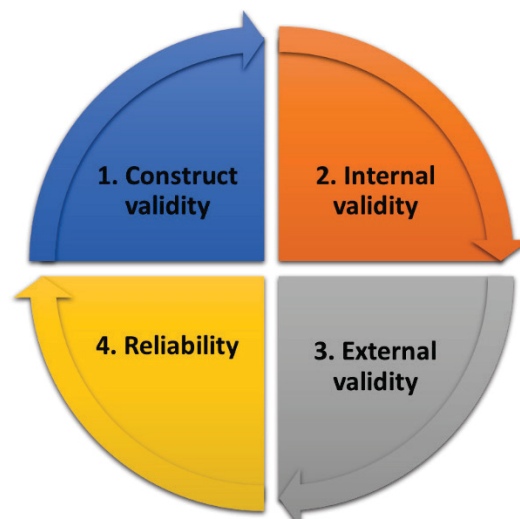


Figure 10. Validity and reliability

- External validity** defines the domain to which a study's findings can be generalized, i.e., it reflects the extent to which the study findings can be applied to other contexts and to a larger population. This validity can be achieved by employing the replication method in multiple-case studies. In this study, the author attempted to increase external validity by conducting the first study (Publication 1) with 26 informants. Then, due to the need to generalize from these initial findings, the author conducted two new studies (Publications 2 and 3) with a larger and more representative number of participants (N = 86). While a quantitative method was used in

the first three publications, the fourth publication utilized mixed methods in order to increase the validity and reliability of the research. Finally, in each publication, the results were checked with a semi-strong and weak market test (based on Fatma 1970; Jensen 1978; Forss 2003), in the form of a short interview, in which key informants or higher-level managers, such as CEOs, directors and general managers, were asked for feedback about the final results.

4. **Reliability** refers to the accuracy and consistency of the research study, as well as test measurements, results and findings. It is “concerned with the robustness of the questionnaire, and the consistent findings at different times and under different conditions, with different samples or, in the case of an interviewer-administered questionnaire, with different interviewers” (Saunders et al. 2009: 373). The reliability of this study was achieved through the design of the case study, involving extensive reviews of existing theory, i.e., collecting evidence, criticizing and evaluating previous studies and following current discussions on leadership behaviour, and the reporting of the case studies. Furthermore, the degree of reliability in this research can be judged through the high positive correlation coefficients (0.91, 0.84, 0.78 etc.) within the variables in each publication (see Publications 1 to 4 for details). Moreover, the use of a triangulation technique (Publication 4) and a comparison technique (Publication 5) was intended to capture the perceptions of reliability for this dissertation.

Ethical considerations

Ethical considerations are crucial in all types of research. The main reason is that the integrity, reliability and validity of the findings rely strongly on ethical principles. Easterby-Smith et al. (2015) summarize 10 principles of ethical practice, as originally identified by Bell and Bryman (2007), based on “a content analysis of the ethical principles of professional associations in the social sciences”. The first six principles are about how to protect the interests of the participants or the research subjects, i.e., to ensure that no harm or other material disadvantage comes to them. The last four principles are about how to protect “the integrity of the research community, through ensuring accuracy and lack of bias in research results”, i.e., to avoid any deception concerning the aims of the research, to declare affiliations, funding and conflicts of interest, to be honest and transparent about the research, and to avoid any misleading conclusions about the research findings (Easterby-Smith et al. 2015: 122).

As this research was in the management field and related to “human subjects”, the author has understood the importance of ethical issues and followed the 10 key principles of ethical practice, based on Bell and Bryman (2007). In fact, when collecting data for the articles, the author was completely transparent with the participants, i.e., the purpose of each case study was clearly explained, a clear example of how to answer the questionnaire was provided and how confidentiality and anonymity would be handled was especially emphasized. The data collected through the Web survey was password-protected, and only the author had access to them. When the study was completed, the Web survey was removed and the data were deleted.

Trust is important; therefore, during the in-depth interviews for the fourth publication, the author additionally asked for permission to record the interviews and later transcribe them for analysis. As interview responses can be biased, the author devised probing questions and used effective interview techniques in order to minimize bias and avoid possible misinterpretations. For confidentiality purposes, all audio recordings and transcriptions were saved and password-protected until the study was finalized, after which they were deleted. Taking all special precautions about the vulnerability of participants and research ethics into account, the author has, in every publication, strived to “justify extremely carefully every deviation from the ethical standards” (Saunders et al. 2009) in order to minimize harm and maximize benefits to the participants, i.e., “to distribute the benefits and burdens of research fairly” (Shamoo and Resnik 2015).

To conclude, each publication in this thesis has a validity and reliability section, which justifies the trustworthiness and strengths of the data collection process, data analysis, results and findings (see Publications 1 to 4 for details). *This means that the validity and reliability of each publication have been examined separately and accepted by the scientific community.* From this perspective, it is reasonable to claim that the knowledge and ideas shared throughout this dissertation are reliable (Timilsina 2017: 37) and are fully in line with the research ethics.

4 SUMMARY OF PUBLICATIONS

This chapter summarizes the overall objectives, key results and contributions of the five publications included in this dissertation. Each publication provides different findings related to leadership behaviour, either from a transformational leadership perspective or that of leadership behaviour in general. Four of the papers were published in peer-reviewed international journals, while a fifth was published in a book. The interconnection between the publications can be seen in Figure 11 below:

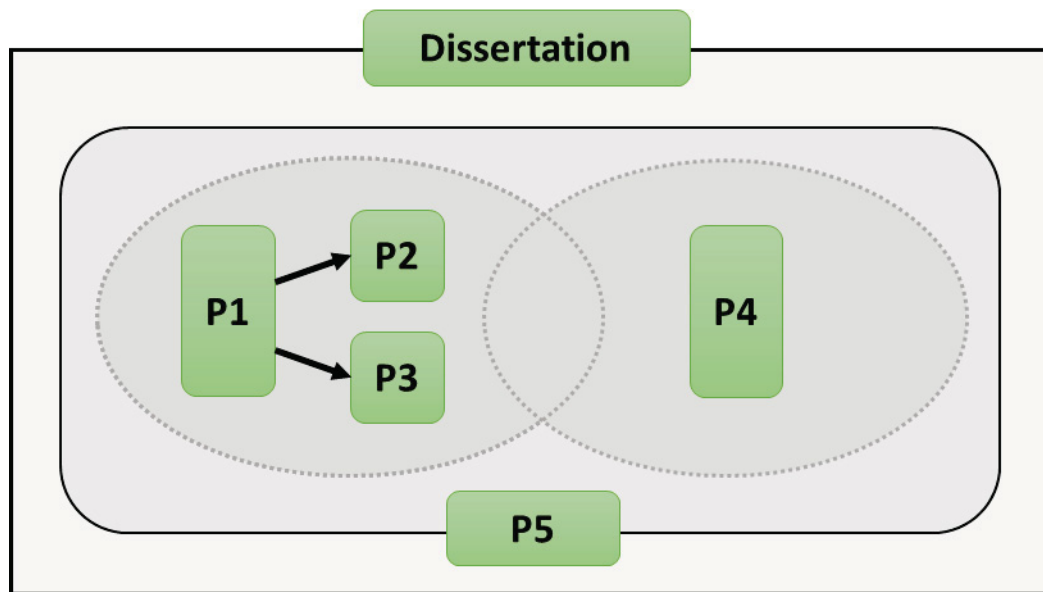


Figure 11. The interconnection between the five publications

As explained in the introductory chapter, these five publications have a logical and strong interconnection. Publication 1 starts by re-examining the existing SCM in the context of a global business environment (N = 26 in one nation). This first publication became the basis for Publications 2 and 3 as the outcomes of Publication 1 comprised five new transformational leadership index formulas to assess the effectiveness of leadership behaviour and a new comprehensive layout of leadership profiles. Based on these findings, there was a need to validate and verify the new models with a larger sample; therefore, Publications 2 and 3 (N = 86 in 21 countries) were written in order to fill the gaps in knowledge.

Next, based on the results and knowledge obtained from Publications 1, 2 and 3, Publication 4 achieved further progress (beyond the transformational leadership perspective) in exploring the leadership behaviour perceived and experienced by managers across organizational levels. As a result, the PPGM was constructed to

measure the key focus areas of leadership behaviour. Finally, Publication 5 is a self-critical evaluation study, which clarifies the values of two leadership behaviour models, the SCM and the PPGM, and justifies the prioritization of one model over the other. Table 8 presents the main information from these publications.

Table 8. Publications at a glance

	Publication 1	Publication 2	Publication 3	Publication 4	Publication 5
Title	Knowledge management and analytical modelling for leadership profiles in a multinational company.	Measuring transformational leadership profiles – an empirical study across 21 nations in a multinational company.	Do cultures, genders, education, working experience or financial status influence the effectiveness of transformational leaders?	People-, process- and goal-focused leadership behaviour: an empirical study in a global company.	The people, process and goal model vs. the sand cone model of transformational leadership -- critical evaluation.
Corresponding author	Thanh Ha-Vikström	Thanh Ha-Vikström	Thanh Ha-Vikström	Thanh Ha-Vikström	Thanh Ha-Vikström
Co-author	Josu Takala	Josu Takala	Josu Takala	---	---
Peer-reviewed scientific articles?	Yes	Yes	Yes	Yes	Yes
Academic Journal/publisher	<i>Knowledge Management. Cambridge: Elsevier</i>	<i>Theoretical Issues in Ergonomics Science Journal</i>	<i>Theoretical Issues in Ergonomics Science Journal</i>	<i>Management Journal</i>	<i>Management Journal</i>
Main contributions (Substantive Theoretical or Methodological contribution)	A developed SCM with five new leadership index formulas to assess the effectiveness of leadership behaviour; a guideline for leaders to improve their leadership skills; a direction for leadership training programmes	An effective measuring method for evaluating leadership profile - A new insight for the organization into developing training programs. A recruitment tool for selection, or promotion purposes	New theoretical perspectives of how internal and external factors influence the effectiveness of transformational leaders; the SCM can be used as an aid in developing sustainable careers	A model to measure the convergence of leadership behaviour: the PPGM; a new instrument to assist the organization in being successful	Novel knowledge for scholars and practitioners about the two leadership behaviour models, which contributes to the clarification of the values of these models and the justification of prioritizing one model over the other

4.1 Publication 1 summary

Research objectives, findings and contributions

The aim of this first paper (“Knowledge management and analytical modelling for transformational leadership profiles in a multinational company”) is to examine the direction of transformational leadership capability for middle-level managers in a business organization, and to pursue/validate the existing SCM, which allows for the direct evaluation and measurement of transformational leadership profiles and offers a total leadership index.

This study utilizes descriptive and normative research approaches, together with an AHP-based survey and the existing transformational leadership SCM. Contributing to the analysis, 26 experienced middle-level leaders from four different business units participated.

During the examination and validation process, some discrepancies were found in the equations for the leadership index (LI), resource index (RI) and total leadership index (TLI) used in the existing SCM. Therefore, this article provides an epistemological account of five new equations for transformational leadership indexes, namely: 1) specific index, 2) outcome index, 3) leadership index, 4) resource index, and 5) total transformational leadership index, all of which provide accurate assessments on leaders. Furthermore, this first publication offers a novel visualization of the SCM, in which each behaviour is presented.

This paper supports the view that the SCM is a holistic analytic concept to evaluate leadership effectiveness and create a transformational leadership profile. The article also provides two pragmatic findings. First, the improved SCM with its clear and comprehensive layout can be used as a guideline for leaders to increase their self-awareness skills. Second, significant features and factors found in the results may convey new visions for leadership training programmes to companies, to assist their managers in improving their leadership skills, as well as develop their own career. Figure 12 shows an example of the improved SCM of transformational leadership.

On the whole, the aim of this first article is descriptive, yet critical of the flaws associated with the SCM as reported in previous research. As a result, the improved SCM now has clear targets and clear indicators (compared with the old one), which means that all indexes are normalized by scaling between 0.00 and 1.00 (an index of 1.00 is the best and an index of 0.00 is the worst). In other words, the higher the index a leader obtains, the greater the essentiality of leadership effectiveness.

Despite several practical and theoretical contributions to knowledge in this area, one limitation of this publication is the relatively small sample ($N = 26$), in comparison with the total number of managers in the studied organization. Therefore, further studies with a larger number of participants would be needed in order to validate and verify the new transformational leadership indexes.

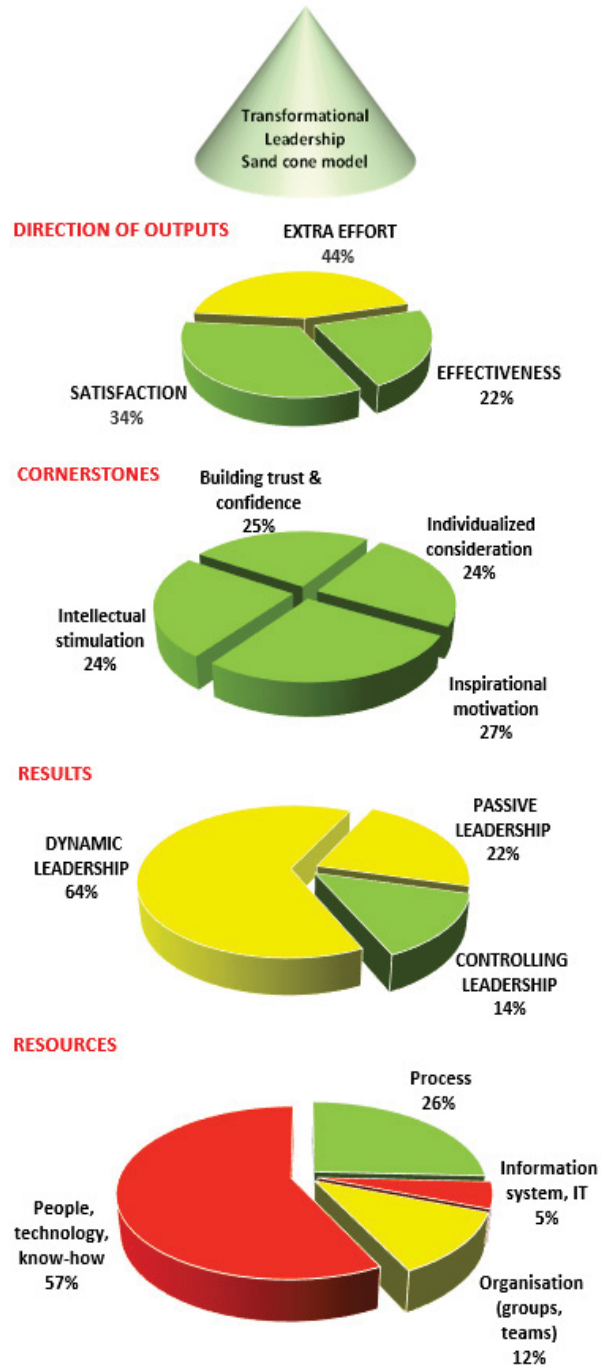


Figure 12. SCM of transformational leadership

4.2 Publication 2 summary

Research objectives, findings and contributions

Due to the limitation of the relatively small number of participants involved in the first publication, the second article addresses this concern by expanding the sample from one country to 21 countries, and by increasing the number of participants from 26 middle-level leaders to 86. The purpose of this paper (“Measuring transformational leadership profiles – an empirical study across 21 nations in a multinational company”) is to validate and verify the new transformational leadership SCM.

A descriptive and normative research approach is utilized in this second article. The conceptual frameworks used were the AHP principle and the new transformational leadership SCM, which included five new equations for transformational leadership indexes. Two tools were used in this study, namely, Expert Choice software (for implementing the AHP) and Microsoft Excel. The questionnaire data in this article were analysed by using correlation via cross tabulations, as well as descriptive and statistical techniques.

The model contains four main components with 14 performance factors: the resources component consists of four factors; the results component consists of three factors; the cornerstones component consists of four factors; and, finally, the direction of outcomes component consists of three factors. When the answers of the respondents are closer or equal to the optimal values, the transformational leadership index will be good (1 is the best index). The better the performance, the higher the index. The performance result will be reflected on the leadership profile. In other words, a good performance will give a green leadership profile. In contrast, if the answers are far away from the optimal values, the index will be low; consequently, the leadership profile will be shown as red.

This second piece of research strongly indicates the existence of a trustworthy model, due to the high inter-correlation values within the 14 behavioural factors. The paper enhances the empirical evidence that leadership behaviour can be effectively visualized by using the transformational leadership SCM. The study provides not only an effective measuring method, but also a quantitative result for the company. Figure 13 shows a total transformational leadership index based on 64 usable responses. Every dot in the graph represents the transformational leadership index for one participant, while the circle in the graph indicates the mean index for all participants (TLI = 0.53).

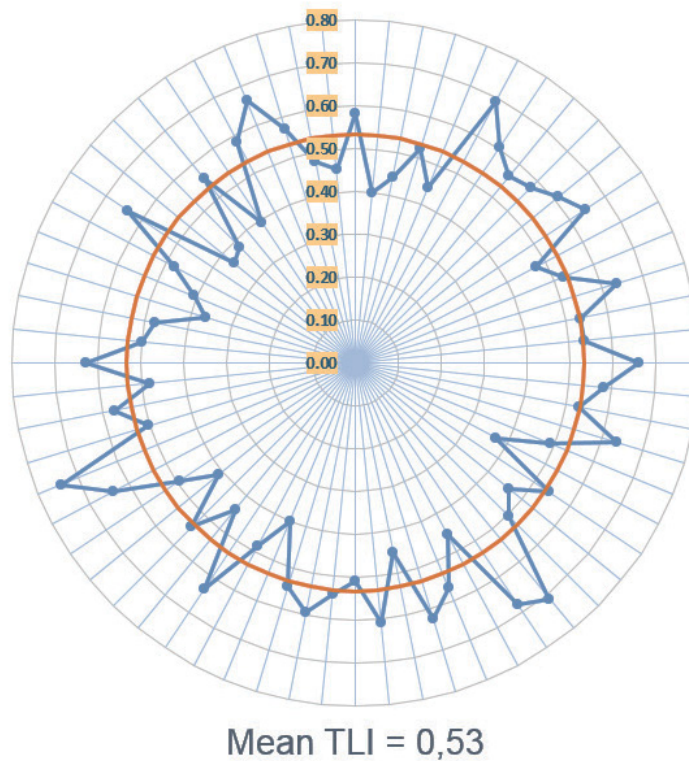


Figure 13. Transformational leadership index

This outcome conveys to the organization a new insight into developing training programmes to support managers in improving their leadership behaviours from national to global levels. Furthermore, this evaluation concept can be utilized for recruitment, selection or promotion purposes for any company. These new findings may increase the use of the transformational leadership SCM, given that, beyond the benefits mentioned earlier, this new model can also be used as an aid in developing sustainable careers for global leaders, or as a recipe for leadership success.

4.3 Publication 3 summary

Research objectives, findings and contributions

The purpose of this third publication (“Do cultures, genders, education, working experience or financial status influence the effectiveness of transformational leaders?”) is to investigate how different internal and external factors, such as cultures, genders, education or financial status, might influence the effectiveness of transformational leaders. This study is motivated by the research question, “In

what way, and to what extent, does culture, gender, education, working experience or financial status influence the effectiveness of transformational leadership?”.

In line with the previous publication, this empirical study is predominantly focused on the new SCM in order to assess and measure transformational leadership capabilities and profiles. The analysis data are based on the same survey responses (86 leaders from four different business units, who are located in 21 countries) used in the second article.

The conceptual frameworks for this study include: (1) the AHP and an AHP-based questionnaire; (2) the transformational leadership SCM and transformational leadership indexes. In addition, the Expert Choice software package (to implement the AHP) and Microsoft Excel are the two tools used in this third study.

The results show that, first, the effectiveness of transformational leaders with a higher education tends to be better than those with a lower level of education. Second, fresh leaders who have recently joined the company (within the previous one to five years) are more effective, compete harder and may enhance the company's innovation better than senior leaders (who have worked for more than 20 years at the same company). Third, female leaders are more transformationally effective than their male counterparts. Fourth, leaders in the Middle East and Asia could be more effective than leaders in Europe. However, this result could be ambiguous because of the unbalanced number of participants from these four regions. Fifth, unexpectedly, leaders in the studied company seem to have failed to take advantage of their multinational subordinates, that is, leaders who have multicultural subordinates seem to be less effective according to the results. Finally, we find a clear positive link between the effectiveness of transformational leaders and the good financial health of a company; in other words, the better the financial status, the better the leaders. These results, together with more details, can be found in the discussion section of the article.

This third empirical study offers a fresh perspective on the theory of how national diversity, gender, education and working experience, as well as financial status, might have an impact on the effectiveness of transformational leaders. The model can be used as a direct guideline for leaders to follow and improve their transformational leadership skills. In addition, this assessment method can be applied to recruitment selection or promotion. Finally, this new conceptual model can also be employed as an aid in developing sustainable careers for global leaders.

4.4 Publication 4 summary

Research objectives, findings and contributions

The purpose of this fourth paper (“People-, process- and goal-focused leadership behaviour: an empirical study in a global company”) is to explore leadership behaviour, as perceived and experienced by managers in a global business organization. This single intrinsic case study attempts to answer the research question, “How is leadership behaviour manifested across organizational levels?”.

The study utilizes a triangulation research method, involving a combination of qualitative and quantitative approaches, including the use of a questionnaire, followed by in-depth interviews and observations in order to examine primary data collected from 20 male and female managers from three levels (directors, general managers and line managers). They all have either an engineering or an information technology background within a global business organization.

The data analysis exposes seven pairwise categories reflecting leaders’ behaviour and their actual deep meanings in a real-life context. Based on these specific categories, four equations are constructed. The results reveal a clear pattern of managerial behaviour in three key focus areas for success, *people, process and goal*, in which, directors and general managers are more *people-focused* than line managers, who in turn tend to be more *process-focused*.

In terms of a theoretical contribution, this fourth publication provides a new insight into how leadership behaviour manifests differently across organizational levels, and also addresses calls for research on the link between the paths of people-, process- and goal-focused leadership behaviour, which no prior research has considered.

In terms of a practical contribution, the normative PPGM (Figure 14) can be used to directly support leaders in enhancing their leadership skills, as well as strike the desired balance for their own organizational success. Furthermore, organizations can use this model for selection or recruitment, or to match the right competent leaders to the right positions. In addition, the model can be used as a compass for leadership development programmes in order to train leaders according to the vision and mission of the respective organization. Among the outcomes of this publication are a new instrument and methodology to measure the convergence of leadership behaviour, which can help an organization to achieve greater success.

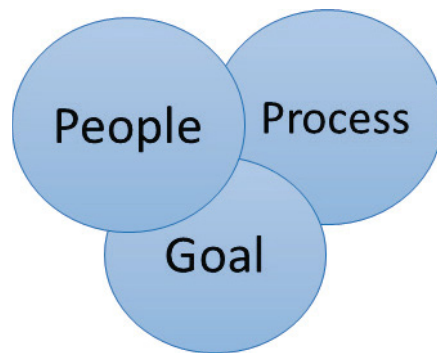


Figure 14. Three focus areas of leadership behaviour

4.5 Publication 5 summary

Research objectives, findings and contributions

The purpose of this fifth publication (“The people, process and goal model vs. the sand cone model of transformational leadership – critical evaluation”) is to compare and self-critically evaluate two leadership behaviour models (the SCM of transformational leadership and the PPGM). This publication is motivated by the following research questions (R1 and R2).

R1. What are the major differences and similarities between the PPGM and the SCM of transformational leadership?

Figure 15 below illustrates an answer to the first question. In terms of similarity, the SCM and the PPGM are both analytical and normative models of leadership behaviour. They are both aligned with organizational interests because they can be used as guidelines for leaders to follow and improve their leadership skills. Both models can be regarded as a compass for organizations when considering leadership training programmes. Finally, they can also be applied to recruitment, selection or promotion procedures.

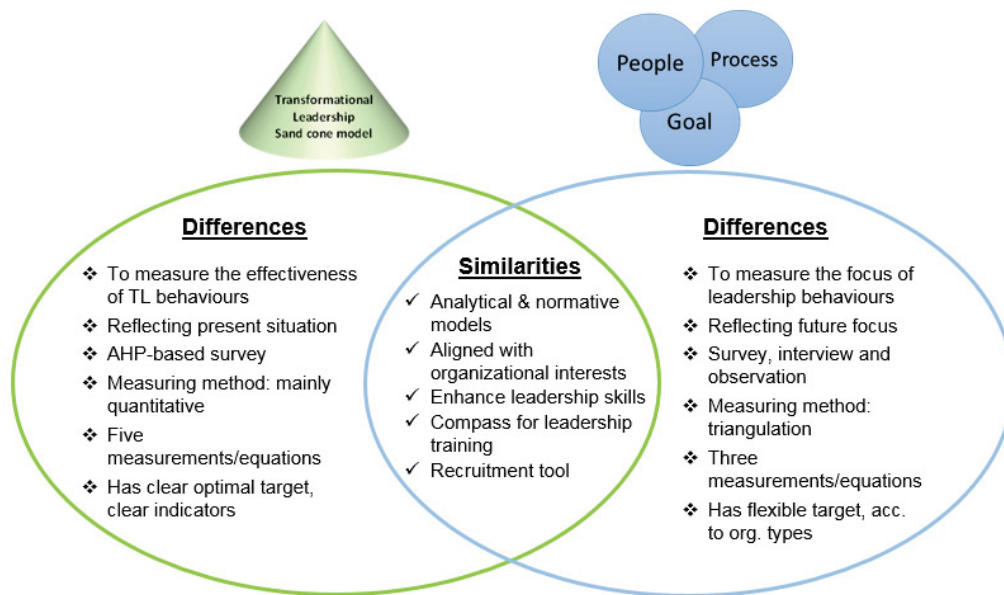


Figure 15. Differences and similarities between the SCM and the PPGM

In terms of differences, first, the SCM aims to measure the effectiveness of transformational leadership behaviours (by using five formulas), whereas the aim of the PPGM is to measure the key focus areas of leadership behaviours (by using four formulas). Second, the measurement of the SCM involves reflecting the current situation as it describes how leaders behave at present, while the PPGM reflects the future focus, as it concentrates more on how leaders transform their behaviour and attitude towards their followers.

Third, the SCM uses an AHP-based questionnaire, i.e., the measurement method is mainly quantitative, whereas the PPGM is based on a questionnaire, in-depth interviews and observations, i.e., the measurement method is both quantitative and qualitative. Finally, the SCM has a clear optimal target, with index 0 being the worst, and index 1 being the best. The common traffic light colour in the SCM is a clear indicator for leaders to follow. On the contrary, the PPGM has flexible targets according to organizational type (non-profit vs. for-profit organization), i.e., people-focused behaviour in a private company may not be the same as people-focused behaviour in a public hospital, and so forth.

R2. What are the major benefits and limitations of these models and how could the models be combined or prioritized?

For leaders, the two models will help them become more aware of their own competences and opportunities. Subsequently, they will be able to improve their

leadership skills and, as a result, skilful leaders will have better prospects of retaining their key followers. For organizations, these models are pragmatic; organizations can use them as a compass for leadership training programmes, as well as a recruitment tool for selection or promotion purposes.

Furthermore, these models can be cost-effective ways of developing people, as they will positively impact on employees' satisfaction and motivation. Consequently, they will increase employees' performance and productivity. As a result, the models will support succession planning for the company, as well as ensure organizational success.

Table 9 below briefly presents the major benefits and limitations of the SCM and the PPGM.

Table 9. Major benefits and limitations of the two models

	Benefits	Limitations
SCM An analytical model to measure the effectiveness of transformational leadership behaviour	The model offers a leadership index and a profile as a guideline for leaders to follow	Expertise is needed to interpret the leadership profile The structure of the model seems to be less rational due to the use of ambiguous terminologies, e.g., “results” and “direction of outputs”, and may be less robust because of a weak correlation between these two components
	Can be used as a compass for leadership development training programmes	
	Can be used for recruitment, selection or promotion purposes	
	Contributes to our understanding of how internal and external factors impact on leadership effectiveness	
	A cost-effective way of developing people to ensure organizational success	
PPGM A normative model to measure the key focus areas of leadership behaviour	The model offers diagnostic feedback on leaders’ key focus areas	This model is constructed based on a single-case study The attributes in the model are a blend of different categories (the attributes are defined based on the patterns in the interviews, survey and observations data)
	Can be used as a compass for leadership development training programmes	
	Can be used for recruitment, or selection, or to match the right competent leaders to the right positions	
	Contributes to our understanding of how leadership behaviour manifests across organizational levels	
	A cost-effective way of developing people to sustain organizational success	
	The model opens up avenues for further research on leadership behaviour	

5 DISCUSSION

This final chapter discusses and self-critically evaluates the major research achievements. The chapter begins with an account of the theoretical contributions, followed by a consideration of the managerial implications of the primary outcomes. Finally, limitations and future research directions are presented.

5.1 Theoretical contributions

The overall purpose of this dissertation is to identify the relevant ways of measuring different dimensions of leadership behaviours, as perceived and experienced by managers themselves in a global organization.

The first publication takes a proactive approach to pursuing and validating the existing SCM by applying it in a new environment (a global business organization), where no similar research has been done before. The key contribution of this publication is in recognizing the discrepancies from the old formulas, and demonstrating the nature of omissions. Indeed, the max (maximum) and min (minimum) in the old equations meant that participants were able to obtain an index greater than what was optimally allowed (e.g., the best/optimal RI = 0.56, but one could obtain 0.57). Furthermore, as the old existing formulas gave fluctuating optimal indexes (for example, optimal LI = 0.75; optimal RI = 0.56; optimal OI = 1; optimal TLI = 0.42), these varying optimal indexes made the comparison between one index and another more complicated.

The old formulas of leadership indexes	The new formulas of leadership indexes
<p>Outcome index (OI) =</p> $1 - \max \left\{ \frac{1}{3} - \frac{EF}{100}, \frac{1}{3} - \frac{SA}{100}, \frac{1}{3} - \frac{EE}{100} \right\}$	<p>Specific index = $1 - \left(\frac{\text{Absolute difference}}{\text{Maximal difference}} \right)$</p>
<p>Leadership index-1 (LI-1) =</p> $\left(\frac{DL}{100} \right) \cdot \left(1 - \frac{\max \{PL, CL\}}{100} \right) \cdot \left(1 - \frac{1}{4} - \frac{\max \{IC, IM, IS, BT\}}{100} \right)$	<p>OI = Mean (Specific index {EF, SA, EE})</p>
<p>Resource index (RI) =</p> $\left(1 - \left(\frac{PT}{100} \right) \right) \cdot \left(\frac{3 \cdot \min \{PC, IT, OR\}}{100} \right)$	<p>LI = Mean (Specific index {IC, IM, IS, BT, PL, CL, DL})</p>
<p>Total leadership index (TLI) = OI * LI * RI</p>	<p>RI = Mean (Specific index {PC, PT, IT, OR})</p>
	<p>TLI = $1 - \frac{\sum \text{Absolute difference values}}{\sum \text{Optimal values}}$</p>

Figure 16. Leadership indexes: old and new

In contrast, based on these discoveries and the knowledge about why and how the incorrectness occurred, the study provides five simple equations that ensure the

validity of the mathematical model, i.e., the closer to the optimal value, the better the index (see Figure 16). This construct will ensure the correctness of the evaluation of leadership behaviour's effectiveness. In particular, five optimal indexes (specific index, resource index, leadership index, outcomes index and total transformational leadership index) follow the same principle, with index 1.00 the best and index 0.00 the worst. This is the most straightforward and productive way to compare indexes with each other.

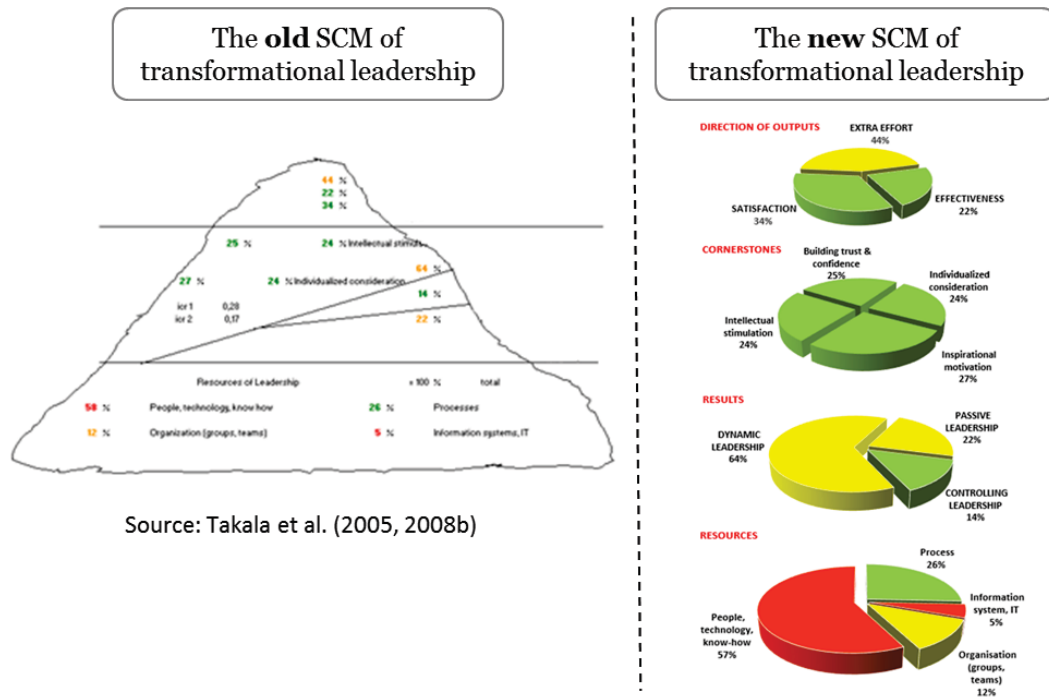


Figure 17. SCM of transformational leadership: old and new

In brief, this study confirms the empirical evidence that “leadership behaviour can be effectively visualized in a holistic way by using the Sand Cone Model” (Takala, Hirvelä, Hiippala and Nissinen 2006a; Takala et al. 2006b), while also extending current knowledge in this area. The study’s uniqueness contributes to leadership theory, by introducing not only an improved model with five new formulas of leadership indexes, which allow for accurate assessments for leaders, but also a new comprehensive layout for the transformational leadership profile, which illustrates 14 behavioural anchors for leadership performance (see Figure 17).

The second publication aims to verify and validate the improved SCM, which includes the five new equations presented in the previous publication. Therefore, the number of participants in this publication is more than three times larger than

that of participants in the first publication (26 vs. 86). In addition, participants' geographical zone was expanded from one country to 21 countries.

The findings confirm that the new formulas are logical and beneficial for analysing the transformational leadership profile. This work also contributes to our understanding of the extent to which leaders display transformational leadership effectiveness. The leadership profile offers a visual guideline, which can help leaders to improve self-awareness of their own leadership behaviour. This will also offer new insight to their respective organization into developing training programmes for these leaders, enabling them to improve their transformational leadership skills (Ha-Vikström and Takala 2016b).

It is worth noting that this analytical concept can be applied to any respondent who is able to answer the questionnaire consistently; indeed, the respondent does not need to be a leader, as he/she can be a student, a teacher, an officer, a nurse or belong to any other occupation (Ha-Vikström and Takala 2016b). An additional theoretical contribution made by the second publication is that the three factors (effectiveness, satisfaction and extra effort) of the new SCM can potentially be extended to other fields of research, such as in developing sustainable careers (the prospectors, analysers and defenders model) for global leaders.

The third publication utilizes the SCM to explore the impact of gender, culture, education, working experience or financial status on the effectiveness of transformational leaders. Figure 18 presents the factors that may influence leadership effectiveness.

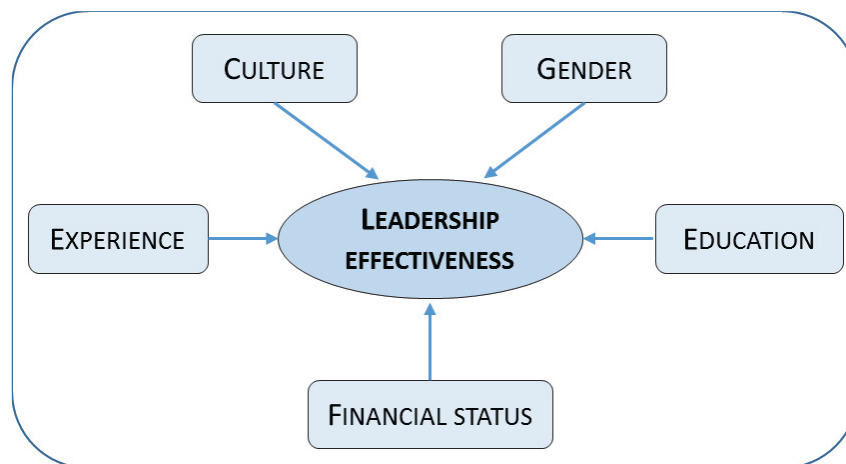


Figure 18. Internal and external factors influencing leadership effectiveness

This publication seeks to answer the following five questions:

1. *To what extent does education influence the effectiveness of transformational leaders?* The results show that leaders with a higher degree obtain a higher leadership index than leaders with lower-level degrees. However, it should be noted that the small number of participants with a PhD in this study imposed certain limitations on the generalization of this finding. The results are nevertheless supported by many previous researchers (see Ramsden 1998; Caldwell and Spinks 1999; Basham 2010; Friedman 2014).
2. *To what extent does working experience influence the effectiveness of transformational leaders?* The results show that leaders who have one to five years of working experience in the company have obtained a higher leadership index than senior leaders who have long-term working experience in the company. This is consistent with the recent findings of Grohsjean, Kober and Zucchini (2016), who insist that mobility leaders tend to strengthen their identity and compete harder in their new organization. Earlier research has also revealed that newcomer leaders can help their company increase market share (Somaya, Williamson and Lorinkova 2008) and develop innovations (Singh and Agrawal 2011).
3. *To what extent does gender influence the effectiveness of transformational leaders?* The findings reveal that female leaders are more transformationally effective than their male counterparts. Clearly, multiple research findings (Carless 1998; Bass 1999; Eagly and Johannesen-Schmidt 2001; Ayman and Korabik 2010; Hoyt 2013; Bahe et al. 2014) support this view and provide several reasons why female leaders are perceived to be more effective than male leaders. Moreover, a recent study by Javidan, Bullough and Dibble (2016), which utilizes the 'Global Mindset Inventory', discovered that "women demonstrated stronger global leadership profiles, in regard to passion for diversity, intercultural empathy, and diplomacy" while "men tended to show strong global leadership regarding global business savvy, cosmopolitan outlook, and interpersonal impact".
4. *To what extent does national diversity influence the effectiveness of transformational leaders?* The results show that leaders who have followers with the same nationality as themselves acquire a higher leadership index than those who have multinational followers. This result may be consistent with the findings of the Global Leadership Forecast

studies of 2014 and 2015, and of Fitzsimmons (2013), who conceded that a successful national leader does not automatically become a high-performing leader of an internationally diversified team. Therefore, it is suggested that, in order to benefit from the skills of diverse followers, leaders should take a holistic approach towards developing a multicultural ideology, while being aware of the range of their multicultural followers' outcomes and leading them strategically (Ha-Vikström and Takala 2016c).

5. *To what extent does financial status influence the effectiveness of transformational leaders?* The results of this paper indicate a clear reciprocal effect between transformational leadership effectiveness and the financial health of a company. This result is supported by Kazmi (2016), who observed a positive link between transformational leadership and financial performance. Jin, Seo and Shapiro (2016) also insist that happy leaders lead better. This can be interpreted thus: when a company's financial status is low, this will probably negatively affect the atmosphere at work fostered by leaders and their behaviours; as a consequence, these leaders' effectiveness will decrease (Ha-Vikström and Takala 2016c).

The third publication not only highlights an effective measuring method for transformational leadership behaviour, but also provides a fresh perspective on the theory of how culture, gender, education, working experience or financial status might impact on the effectiveness of transformational leaders. This theory offers new ideas for developing leadership training programmes, for example, organizing 'cultural diversity training' to support leaders who have multicultural subordinates, or strategic leadership training for senior leaders to increase their transformational role behaviour, in order to take the company to the highest level of performance (Ha-Vikström 2016c: 14).

However, it should be noted that the research was conducted within a male-dominated organization where the number of female participants was relatively small. Moreover, as stated, the number of the participants with a doctoral degree was limited, while the number of participants from Europe was dominant. Therefore, in those particular respects, there is a need to treat these findings with caution, given that generalization to some extent is limited.

The fourth publication seeks to answer the question, "How is leadership behaviour manifested across different organizational levels?". Beyond the transformational leadership perspective, this paper is based on an experimental and experiential framework, which incorporates different partial elements borrowed from leadership theories. As the author has over 20 years of experience

in industrial and supply chain management, this study was conducted on the basis of a greater breadth of perspectives and a deeper understanding of the leadership behaviour phenomenon (through multiple investigation lines, such as a survey, in-depth interviews and long-term observations on the reality of the studied business environment).

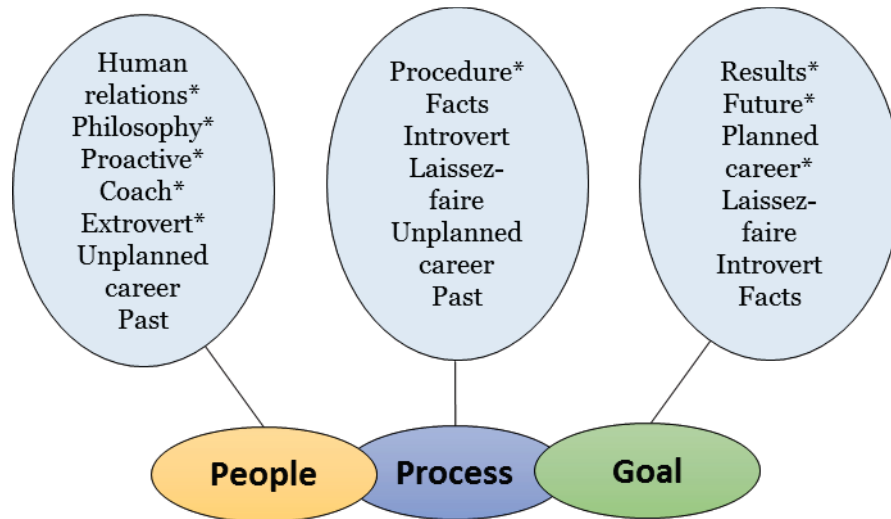


Figure 19. The pattern of leaders' focus areas

The results reveal the patterns of managerial behaviour in three key focus areas, *people*, *process* and *goal* (see Figure 19); higher management focus least on process compared with lower management.

The major contribution of the fourth publication is that it bridges a gap in the field by initiating a new normative leadership behaviour model, the PPGM, as well as a new instrument and methodology (with three simple equations and one equation for validation), to measure the key focus areas of leadership behaviour. This research contributes to the literature in the form of new insight into how leadership behaviour manifests differently across different organizational levels. Moreover, the empirical study has identified productive opportunities for further research on the link between the paths of people-, process- and goal-focused leadership behaviour, which no prior research has considered (Ha-Vikström 2017).

The fifth publication makes a comparison between two major achievements (i.e., the improved SCM and the PPGM), while providing a self-critical evaluation of the overall contributions. This study contributed to the literature by exposing the importance of leadership behaviour in both models. In fact, the elements incorporated in the SCM conceptualize and specify the effectiveness of

transformational leadership behaviour, while different factors integrated into the *PPGM* indicate the patterns of leaders' focus areas in real-life experiences.

Figure 20 illustrates a “helicopter view” of the two models: the SCM is used for current prospects (as it describes how leaders behave at present); conversely, the *PPGM* can be used for long-term opportunities or in the future (as it concentrates more on how leaders want to transform their behaviour and attitude towards followers).

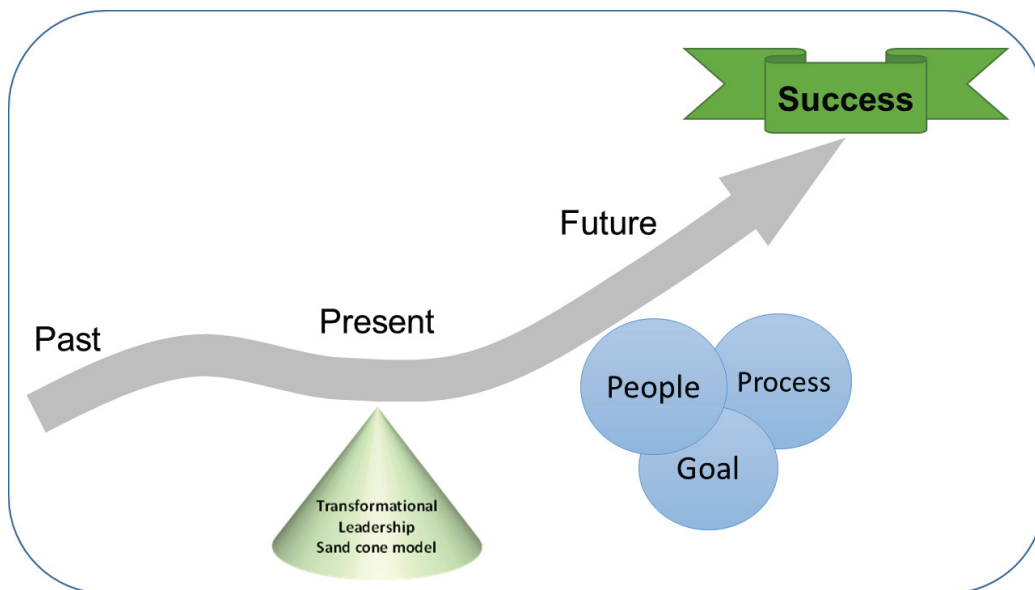


Figure 20. An overview of the two models and their main focus

To summarize, both the SCM of transformational leadership and the *PPGM* extend the theories of leadership behaviour. This research not only enhances our understanding of the significance of leadership behaviours and how they can be analysed and measured, but also contributes to the clarification of the values of the two models and the justification of prioritizing one model over the other.

5.2 Implications of the findings in practice

Besides the theoretical contributions mentioned above, each publication offers a number of practical implications. For example, the comprehensive SCM provides an excellent opportunity for leaders to improve their self-awareness, as it gives a clear indication to leaders of which areas are good and which should be improved. In other words, the improved SCM can be used as a guideline for managers to improve their leadership skills. Furthermore, this evaluative concept can be

applied by any organization to recruitment, selection or promotion activities. Finally, the findings of Publication 1 offers top management or organizations new insights into how to develop training programmes to support leaders in improving their leadership behaviour, as well as developing their own profession.

The results of Publication 2 (one of the first large-scale studies to empirically test the analytical SCM in a global environment) indicate that the SCM is an effective measuring method, which can generate a clear leadership profile. Similarly, with the managerial contribution from Publication 1, the leadership index can be used as a parameter for leaders to improve their performance. Furthermore, the colours in the profile (green means “good”, yellow means “should be improved” and red means “should be avoided”) can be utilized to direct leaders to follow and improve their leadership skills.

In fact, the new SCM (presented in Publications 1, 2 and 3) exclusively contributes remarkable value to the use of assessments in helping to make the recruitment of leaders more effective, as well as in designing global leadership development training programmes. Importantly, Publication 3 suggests that organizations should be proactive in developing their strengths and overcoming their weaknesses, such as how to inspire senior leaders so that they feel more motivated to do their best, because their experiences and knowledge can be (too good to ignore) valuable resources for the company. In particular, leaders/managers who work in a diverse team can take concrete steps to help their team members to develop a hybrid culture and become more effective.

Publication 4 makes several managerial contributions. Firstly, the normative leadership behaviour model, the PPGM, provides diagnostic feedback that leaders can follow to develop their leadership skills according to the desired balance of their own organizational success. Secondly, companies or organizations can apply this model to selection or recruitment activities in order to match the right competent leaders to the right positions (Ha-Vikström 2017). Finally, this instrument for developing people should support succession planning for the organization in pursuit of greater success.

As stated, Publication 5 consolidates all the managerial contributions from the SCM and the PPGM. These two models will help managers and leaders to become more aware of their own competences, such that they will consequently be able to improve their leadership skills. Moreover, skilful managers have better prospects of retaining their key subordinates, which in turn will contribute to the financial benefits enjoyed by organizations and ensure organizational triumph.

To conclude, the practical implications of this research are useful in the following areas:

- 1) Managers can use the SCM for developing self-awareness and identifying their own strengths and weaknesses to improve their transformational leadership skills.
- 2) Higher-level management teams can use the PPGM to identify the desired level of their own organization, then to use the model for matching the right competent leaders to the right positions.
- 3) Human resources departments could apply both the SCM and the PPGM to recruitment, selection or promotion activities.
- 4) Human resources department can utilize the leadership profiles and indexes obtained by the leaders through either the SCM or the PPM, which would act as a guideline in the design of global leadership development training programmes.
- 5) Subordinates (or any respondents who are able to answer the questionnaire consistently) can use the SCM to develop their self-knowledge about leadership behaviour, or to identify strengths and weaknesses for their own career planning.

5.3 Limitations and future research avenues

This section describes the general limitations of the SCM of transformational leadership and the PPGM, then makes recommendations for future research.

The strengths of the SCM are based on many remarkable findings by many researchers over the past decade. Despite the fact that several substantial improvements have recently been applied to the model, expertise is still needed to interpret every detail in a leadership profile with a view to providing “a clear diagnostic comment to the leaders or coaching them to create a specific individual development plan” (Kang and Jin 2015). This is because the two components (results and direction of outputs) in the SCM are, to some extent, ambiguous; in other words, the term “results” can be interpreted in a similar way to “direction of outputs”, which means that these two terms may not offer a decisive description and could confuse the leader.

Even though, in all three publications (1, 2 and 3), the results show that the intercorrelation values among the 14 behaviour factors of the model were high, i.e., from 0.40 to 0.85 (for more details, see Publications 1 to 3), this gives a strong indication of a trustworthy model. However, the logical connection between the “cornerstones” and the “direction of output”, as well as the defined optimal value for each element in the model, seems to be inexplicit. Thus, these limitations could make the structure of the SCM less rational and robust.

From this perspective, further research on the SCM would be needed in order to fine-tune the logical construction of the model and make it even more explicit. More research is also recommended to establish the strong validity and reliability of the model by testing it in different types of organizations, such as non-profit vs. for-profit, or business vs. public organizations. Finally, further studies to measure the effectiveness of middle managers on the basis of evaluations by managers’ superiors or subordinates would be useful as well.

Turning to the PPGM, despite the fact that the three focus areas are apparent and easy to understand (i.e., people, process and goal), the major limitation of the model is related to the attributes pattern (coach vs. results; facts vs. philosophy; introvert vs. extrovert and so forth). One might ask why the attributes are a combination of different categories. It is important to keep in mind that the model describes the behaviour and attitude experienced by the leaders across different organizational levels. These attributes are the findings based on in-depth interviews, surveys and observations in a real-life global business organization.

Furthermore, despite many sufficient findings about the model, another limitation to consider from the fourth publication is related to the features of the sample. We do not know whether these results would have been generalizable if the sample size had been somewhat larger or more balanced in terms of gender, or if the participants’ nationalities had been other than Northern European (Ha-Vikström 2017: 96). In particular, the sample size ($N = 20$) may not have been statistically representative to a sufficiently strong extent. However, it should be remembered that the triangulation of multiple sources (in-depth interviews, questionnaire and long-term observations), together with strong techniques involving multidimensional levels of measurement, should increase the credibility and trustworthiness of the results.

Nevertheless, this is the first study combining three dimensions of leadership behaviour (people, process and goal) through a triangulation method, which no prior researchers have connected. The nature of this dissertation enables

researchers to shed new light on leadership behaviour in the course of further investigations from different aspects, as follows:

- To validate and verify the PPGM with a more diverse or balanced sample size, including different organizational settings
- To measure and compare the focus areas of the PPGM in different organizational types (within the private sector vs. the public sector, or within for-profit organization vs. non-profit organizations)
- To determine the focus of leaders' behaviour by utilizing the seven pair factors in an AHP-based questionnaire
- To explore the relationship between the PPGM and organizational performance

With regard to the **research design and assumptions**, the real context of this research (ontology) is formed by the perceptions and interpretations of the participants and their consciousness of the world (i.e., social constructivism). One could argue that this may have introduced some biases, e.g. the double roles (researcher role and employee role) of the author in Publications 4 and 5 may have increased the level of subjectivity or prejudice concerning the observations or interpretation of the research.

However, as stated in Section 3.5 on validity and reliability, in order to explain the different tests and techniques used to ensure perceptions of validity and reliability, this study adopted a 'complete participant' approach, which means that the researcher intervenes in the environment (Gold 1958). As a matter of fact, the existence of a long-term relationship between the participants and the researcher helped the latter to draw out leaders' deeper thoughts and feelings much more than would have otherwise been possible (Maclean, Harvey and Chia 2012). As this study focused on leaders' behaviour and attitude, that perception could be effortlessly observed via social contact and business relationships (Ha-Vikström 2017: 81).

Furthermore, in order to increase the reliability of the research, all data collected through observations were quantified and then compared with the data collected from the questionnaire and in-depth interviews. From such a perspective, in terms of the methodological aspects, the author stresses the usefulness of the triangulation method adopted in Publications 4 and 5, which combined multiple

data sources and multidimensional levels of measurement with strong techniques in order to provide credibility and validity to the research findings.

Moreover, this dissertation has attempted to respond to the practical application of ideas, as well as scanning them in the context of managers' experiences (pragmatism), by interpreting both objective and subjective points of views of individual participants (hermeneutics) into a cohesive whole. This is a good transition to the reality (epistemology) or meaning and belief of the phenomenon of leadership behaviour.

Based on the above-mentioned perspective, the dissertation was successful in adopting both hermeneutics and pragmatism: a healthy and fruitful combination in research, which advances the relevance of the study and provides a rich depiction of life and behaviour in a global organization.

Finally, as was stated in the chapter on the research design and method, a clear conclusion in retrospect is that the case study chosen for this study should have been combined with a constructive research approach (Kasanen et al. 1993, Lehtiranta et al. 2015). Indeed, such a combination would have been worthwhile for the whole dissertation research process.

6 CONCLUSION

The evidence shows that leaders make a difference, that great leaders make a great difference and that poor leaders create dissatisfaction. Importantly, any developing leadership behaviour will have a positive impact on employee satisfaction and commitment. Without effective measuring tools, many poor leaders secure positions by chance or luck, while lacking the right skills and competences. Consequently, many subordinates will suffer, job satisfaction and motivation will decrease, productivity will reduce, and talented employees will move to other competitive organizations. This will impact the bottom line and negatively affect organizational performance, as well as result in a downturn in economic growth.

For that reason, now more than ever, in order to succeed in an intensely competitive market, every organization should identify new and effective ways to measure leadership behaviour in order to master the global business arena and ensure optimum success.

The purpose of this PhD research has been to explore novel ways of measuring different dimensions of leadership behaviour, as perceived by the leaders themselves in a global industry. With respect to this objective, the dissertation has been successful, not only in improving the existing SCM of transformational leadership, but also in creating a newly efficient measuring model, the PPGM. Both of these models extend the theories of leadership behaviour: the first model focuses on the effectiveness of transformational leadership behaviour, while the latter model pays attention to leaders' focus areas across different organizational levels, regardless of the leadership styles.

However, as stated, the SCM can be used for short-term pursuits, whereas the PPGM is best suited for long-term endeavours. Due to these differences, each leader is recommended to utilize the SCM to enhance his or her current leadership skills. Meanwhile, higher-level management teams are advised to use the PPGM to strike or define the healthiest balance between different leadership focus areas in their own organization.

Although the similarities between the two models are evident, the differences are noteworthy. In fact, the SCM and the PPGM were developed independently for partially different purposes. Therefore, this study suggests that every organization should apply each model's strengths to their own situation in order to maximize organizational effectiveness and success.

References

- Abdullah, N. H., Shamsuddin, A., & Wahab, E. (2012). The influence of transformational leadership on product innovations among small business. Proceedings International Conference of Technology Management, Business and Entrepreneurship 2012 (ICTMBE2012), Melaka, Malaysia 18-19 Dec 2012.
- Abdullah, N. H., Shamsuddin, A., Wahab, E., & Hamid, N. A. A. (2014). The relationship between organizational culture and product innovativeness. *Procedia-Social and Behavioral Sciences*, 129, 140-147.
- Anderson, D. E. (1974). *Leadership Effectiveness in Education as Related to Congruence between Human Behavior Types and Leadership Styles*. PhD dissertation, Western Michigan University, Kalamazoo.
- Antonakis, J. & House, R. J. (2014). Instrumental Leadership Measurement and Extension of Transformational-Transactional Leadership Theory. *The Leadership Quarterly*, 25, 746-771.
- Anzalone, C. (2012). Differences between Task-Oriented Leaders & Relational-Oriented Leaders. Retrieved from <http://smallbusiness.chron.com/differences-between-taskoriented-leaders-relationaloriented-leaders-35998.html>
- Avolio, B. J. (1999). *Full leadership development*. Thousand Oaks, CA: Sage.
- Ayman, R., & Korabik, K. (2010). Leadership. Why Gender and Culture Matter. *American Psychological Association* 65(3), 157-170.
- Bahe, S., R. Ruiz, A. Tejada, S. Sill, & M. Poole. (2014). Women in Leadership: How a Woman's Background Affects Her Leadership Style. *Academic Journal of Social Justice* 6(1), 74-80.
- Bai, Y., Lin, L., & Li, P. P (2016), How to enable employee creativity in a team context: A cross-level mediating process of transformational leadership. *Journal of Business Research*, 69(2016), 3240-3250
- Bartunek, J. M., & Louis, M. R. (1996). *Insider-Outsider Team Research*. Newbury Park: Sage
- Basham, L. M. (2010). Transformational and Transactional Leaders in Higher Education. *International Review of Business Research Papers* 6(6), 141-152.
- Bass B. M. & Bass R. R. (2008). *The Bass Handbook of Leadership: Theory, Research, and Managerial Applications*. Free Press, New York, NY.
- Bass, B. M. & Avolio, B. J. (Eds.). (1994). *Improving organizational effectiveness through transformational leadership*. Thousand Oaks, CA: Sage Publications.
- Bass, B. M. (1985). *Leadership and performance beyond expectation*. New York: Free Press.

Bass, B. M. (1998). *Transformational leadership: Industry, military, and educational impact*. Mahwah, NJ: Erlbaum.

Bass, B. M., & Avolio B. J. (1990). The implications of transactional and transformational leadership for individual, team, and organizational development. *Research in Organizational Change and Development*, (4), 231–272.

Bass, B. M., & Avolio, B. J. (1995). *Multifactor leadership questionnaire leader form (5X-short)*. Redwood City, CA: Mind Garden.

Bass, B. M., & Riggio, R. E., (2006). *Transformational Leadership*, second ed. Lawrence Erlbaum Associates, Inc, Mahwah, NJ.

Bass, B. M., & Steidlmeier, P. (1999). Ethics, Character, and Authentic Transformational Leadership Behaviour. *Leadership Quarterly*, 10(2), 181–217.

Bass, B. M., (1998). *Transformational Leadership: Industrial, Military, and Educational Impact*. Lawrence Erlbaum Associates, Mahwah, New Jersey, London.

Bass, B. M., Avolio, B. J., Jung, D. I., & Berson, Y. (2003). Prediction unit performance by assessing transformational and transactional leadership. *Journal of Applied Psychology*, 88(2), 207–218. <http://dx.doi.org/10.1037/0021-9010.88.2.207>

Bass, B.M. (2000). The future of leadership in learning organizations. *Journal of Leadership Studies*, 7(i3), 18.

Bass, B. M., & Avolio, B. J. (1997). *Full-range of leadership development: Manual for the Multifactor Leadership Questionnaire*. Palo Alto, CA: Mind Garden.

Black, J. S., & Mendenhall, M. E. (2007). A practical but theory-based framework for selecting cross-cultural training methods. In M. E. Mendenhall, G. R. Oddou, & G. K. Stahl (Eds.), *Readings and cases in international human resource management*. New York, NY: Routledge.

Blake, R. R., & Mouton, J. S. (1964). *The Managerial Grid*. Houston, TX: Gulf.

Boer, D., Deinert, A., Homan, A. C., & Voelpel, S. C. (2016). Revisiting the mediating role of leader–member exchange in transformational leadership: the differential impact model. *European Journal of Work and Organizational Psychology*, 1–17. <http://doi.org/10.1080/1359432X.2016.1170007>

Bono, J., & Judge, T. (2003). Self-Concordance at Work: Toward Understanding The Motivational Effects of Transformational Leaders. *Academy of Management Journal* 46, 554–571.

Bowers, D. G., & Seashore, S. E. (1966). Predicting organizational effectiveness with a four-factor theory of leadership. *Administrative Science Quarterly*, 238–263.

- Bryman A. & Bell, E. (2015). *Business Research Methods*. 4th edition, Oxford University Press, p.27
- Bryman, A. (2012). *Social Research Methods*. 4th edition, Oxford University Press.
- Burke, C. S., Stagl, K. C., Salas, E., Pierce, L., & Kendall, D. (2006). Understanding team adaptation: A conceptual analysis and model. *Journal of Applied Psychology*, 91, 1189–1207.
- Burns J. M. (1978). *Leadership*. New York. Harper and Row.
- Burrell, G., & Morgan, G. (1979). *Sociology paradigm and Organizational analysis*. London: Heinemann.
- Caldwell, B. J., & Spinks, J. M. (1999). *Beyond the Self-Managing School: Student Outcomes and the Reform of Education Series*. London: Falmer Press.
- Carless, S.A. (1998). Gender differences in Transformational Leadership: An Examination of Superior, Leader, and Subordinate Perspectives. *Sex Roles*, 39, 887-902. <https://doi.org/10.1023/A:1018880706172>
- Cartwright, D. E., & Zander, A. E. (1960). *Group dynamics: Research and theory*. Evanston, IL: Row, Peterson & Co.
- Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education, 7th edition*. Abington, Oxon: Routledge.
- Collis, J. & Hussey, R. (2003). *Business Research: A Practical Guide for Undergraduate and Postgraduate Students*. 2nd edition, Basingstoke: Palgrave Macmillan.
- Conger, J. A. (2011). *Charismatic leadership*. The SAGE handbook of leadership. Edited by A. Bryman, D. L. Collinson, K. Grint, B. Jackson, and M. Uhl-Bien, 86–102. Thousand Oaks, CA: Sage.
- Creswell, J. (2002) *Qualitative, Quantitative, and Mixed Methods Approaches, 2nd edition*. Thousand Oaks, CA: Sage.
- Creswell, J. W. (2009). *Research Design, Qualitative, Quantitative and Mixed Method Approaches*. 3rd edition, Sage Publications Inc.
- Crotty, M. (1998). *The foundations of social research: Meaning and Perspective in the Research Process*. Sage Publications Inc.
- Culp, G., & Smith, A. (2005). Leadership Effectiveness and Behavior. *Leadership & Management in Engineering*, 5(2), 39-48.
- Dalalah, D., Al-oqla, F., & Hayajneh, M. (2010). Application of the analytic hierarchy process (AHP) in multi-criteria analysis of the selection of cranes. *Jordan Journal of Mechanical and Industrial Engineering*, 4(5), 567–578

Deinert, A., Homan, A. C., Boer, D., Voelpel, S. C., & Gutermann, D. (2015). Transformational leadership sub-dimensions and their link to leaders' personality and performance. *The Leadership Quarterly*, 26(6), 1095–1120. <http://doi.org/10.1016/j.leaqua.2015.08.001>

Deniz, C. & Metin, N. (2009). Using Analytic Hierarchy Process for selecting the appropriate host country to study English language abroad. *International Journal of Social Sciences and Humanity Studies*, 1.

Díaz-Sáenz, H. R. (2011). *Transformational leadership*. In *The SAGE Handbook of Leadership* (pp 299–310). SAGE Publications.

Dillman, D. A. (2007). *Mail and Internet surveys: The tailored design method*, 2nd edition. Hoboken, NJ: John Wiley & Sons.

Dinh, J. E., Lord, R. G., Gardner, W. L., Meuser, J. D., Liden, R. C., & Hu, J. (2014). Leadership theory and research in the new millennium: Current theoretical trends and changing perspectives. *Leadership Quarterly*. <http://doi.org/10.1016/j.leaqua.2013.11.005>

Dirks, K. T., & Ferrin, D. L. (2002). Trust in leadership: meta-analytic findings and implications for research and practice. *Journal of applied psychology*, 87(4), 611.

Doz, Y. & Wilson, K. (2017). *Ringtone: Exploring the Rise and Fall of Nokia in Mobile Phones*. The Oxford University Press. ISBN: 9780198777199. Published to Oxford Scholarship Online: November 2017. DOI:10.1093/oso/9780198777199.001.0001

Dubois, A., & Gilbert, M. (2010). From complexity to transparency: managing the interplay between theory, method and empirical phenomena in IMM case studies. *Industrial Marketing Management*, 39(1), 129-136

Dudovskiy, J. (2016). *The Ultimate Guide to Writing a Dissertation in Business Studies: A Step-by-Step Assistance*. Pittsburgh, USA.

Duffy, F. (2006). *Power, Politics, and Ethics in School Districts: Dynamic Leadership for Systemic Change, Leading Systemic School Improvement*. Lanham, MD: Rowman & Littlefield Publishing Group. ISBN-13: 978-1578863181.

Eagly, A.H., & Johannesen-Schmidt, M.C. (2001). The Leadership Styles of Women and Men. *Journal of Social Issues*, 57, 781–797.

Easterby-Smith, M., Thorpe, R. & Jackson, P. (2012). *Management Research*. 4th edition, Sage Publications Ltd. London.

Elliott, S. (2013). *Core Questions in Philosophy: A Text with Readings*. 6th edition, Boston: Pearson Education. p. 28

Fama, E. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance*, 25(2), 383–417.

- Ferdows, K. & De Meyer, A. (1990). Lasting improvements in manufacturing performance: in search of a new theory. *Journal of Operations Management*, 9, 168-185.
- Fiedler, F. E. & House, R. J. (1988). *Leadership Theory and Research: A Report of Progress*. In International Review of Industrial and Organizational Psychology, edited by C. L. Cooper and I. Robertson, 73–92. New York: Wiley.
- Fitzsimmons, S. R. (2013). Multicultural Employees: A Framework for Understanding How They Contribute to Organizations. *Academy of Management Review*, 38(4), 525–549.
- Fleishman, E. A. (1951). *The Relationship Between " leadership Climate" and Supervisory Behavior*. Doctoral dissertation, Ohio State University.
- Fleishman, E. A. (1953a). The description of supervisory behavior. *Journal of applied psychology*, 37(1), 1-6.
- Fleishman, E. A. (1953b). The measurement of leadership attitudes in industry. *Journal of Applied Psychology*, 37(3), 153-158.
- Fleishman, E. A. (1957). *A Leader Behavior Description for Industry*. In Leader Behavior: Its Description and Measurement, edited by R. Stogdill and A. Coons, 10–119. Columbus, oh: Ohio State University.
- Flick, U. (2011): *Triangulation*. New and updated 3rd edition. Wiesbaden: VS Verlag.
- Forss, T. (2013). *Improving Operational Performance within Social Housing*. PhD dissertation, University of Vaasa. Retrieved from https://www.univaasa.fi/materiaali/pdf/isbn_978-952-476-450-6.pdf
- Friedman, S. D. (2014). *Leading the Life You Want*. Boston, MA: Harvard Business Review Press. ISBN-978-1-4221-8941-2.
- Fulkerson, J. R. (1999). Global leadership competencies for the twenty-first century: More of the same or a new paradigm for what leaders really do? In W. H. Mobley, M. J. Gessner, & V. Arnold (Eds.), *Advances in global leadership*. Stamford, CT: JAI Press.
- Gagnon, Y. C. (2010). *The case study as research method: A practical handbook*. PUQ.
- Gartzia, L., & Baniandrés, J. (2016). Are people-oriented leaders perceived as less effective in task performance? Surprising results from two experimental studies. *Journal of Business Research*, 69(2), 508-516.
- Gill, R. (2011). *Theory and practice of leadership*. London: SAGE Publications.
- Gold, R. L. (1958). Roles in Sociological Field Observations. *Social Forces* 36(3), 217–23.

- Goulding, C. (2002). *Grounded Theory: A Practical Guide for Management Business and Market Researchers*. London: Sage.
- Greenaway, L. (2011). *Evaluation and Professional Development Services. Using case study in research. How to tell a 'good' story*. In a presentation by Lesley Greenaway in the research forum at the University of Dundee. Retrieved from <http://www.evaluationservices.co.uk/46/Using-case-study-research-How-to-tell-039good039-story/>
- Grohsjean, T., Kober, P., & Zucchini, L. (2016). Coming back to Edmonton: Competing with Former Employers and Colleagues. *Academy of Management Journal*, 59(2), 394–413.
- Guba, E. G. & Lincoln, Y. S. (2005). Paradigmatic Controversies, Contradictions, and Emerging Influences, in Denzin, N.K. and Lincoln, Y.S. (eds), *Handbook of Qualitative Research*, 3rd edition, Sage Publications, London.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research, in N.K. Denzin and Y.S. Lincoln (eds), *Handbook of Qualitative Research*. London: Sage, pp. 105–17.
- Hair Jr, J. F., Wolfinbarger, M., Money, A. H., Samouel, P., & Page, M. J. (2015). *Essentials of business research methods*. Routledge.
- Hallebone, E. & Priest, J. (2009). *Business and Management Research: Paradigms and Practices*. Palgrave Macmillan, New York.
- Halpin, A. W. (1954). The leadership behavior and combat performance of airplane commanders. *The Journal of Abnormal and Social Psychology*, 49(1), 19.
- Harold, C. M., & Holtz, B. C. (2014). The effects of passive leadership on workplace incivility. *Journal of Organizational Behavior* 36(1). DOI. 10.1002/job.1926
- Harrington, H. J. (1991). Improving Business Processes. *The TQM Magazine*, 3 (1): 39–44.
- Harrington, H. J. (2011). *Streamlined Process Improvement*. New York: McGraw-Hill.
- Ha-Vikström (2017). People-, process- and goal-focused leadership behaviour: an empirical study in a global company. *Management journal*. 12(1), spring 2017, issn 1854-4231. DOI: 10.26493/1854-4231.12.75-103.
- Ha-Vikström, T., & Takala, J. (2016a). *Knowledge Management and Analytical Modelling for Transformational Leadership Profiles in a Multinational Company*. In Successes and Failures of Knowledge Management, edited by J. Liebowitz, 151–174. Cambridge: Elsevier.
- Ha-Vikström, T., & Takala, J. (2016b). Measuring transformational leadership profiles – an empirical study across 21 nations in a multinational company, *Theoretical Issues in Ergonomics Science*, 19(1), 1–20, DOI: 10.1080/1463922X.2016.1239780

Ha-Vikström, T., & Takala, J. (2016c). Do Cultures, Genders, Education, Working Experience or Financial Status Influence the Effectiveness of Transformational Leaders? *Theoretical Issues in Ergonomics Science*. 19(1), 21-41, DOI: 10.1080/1463922X.2016.1243275

Hay, C. (2012). *Political Analysis: A Critical Introduction*. Palgrave. New York.

Hemphill, J. K., & Westie, C. M. (1950). The measurement of group dimensions. *The Journal of Psychology*, 29(2), 325-342.

Heron, J. (1996). *Co-operative Inquiry: Research into the Human Condition*. London: Sage.

Herrmann, D., & Felfe, J. (2014). Effects of Leadership Style, Creativity Technique and Personal Initiative on Employee Creativity. *British Journal of Management*, 25(2), 209–227.

Hitt, M. A., Beamish, P.W., Jackson, S. E., & Mathieu, J. E. (2007). Building Theoretical and Empirical Bridges across Levels: Multilevel Research in Management. *Academy of Management Journal*, 50:1385–99.

House, R. J. (1971). A path goal theory of leader effectiveness. *Administrative science quarterly*, 321-339.

Hoyt, C. L. (2013). Women and leadership. In *Leadership Theory and Practice*, 6th edition, edited by P. Northouse, 349–382. Thousand Oaks, CA: Sage.

Hughes, T. A. (2014). Idealized, Inspirational, and Intellectual Leaders in the Social Sector: Transformational Leadership and the Kravis Prize. CMC Senior Theses. Paper 906. Retrieved from http://scholarship.claremont.edu/cmc_theses/906

Hyypiä, M., & Parjanen, S. (2013). Boosting creativity with transformational leadership in fuzzy front end innovation processes. *Interdisciplinary Journal of Information, Knowledge and Management*, 8, 21-41.

Indvik, J. (1986). *Path-goal theory of leadership: a meta-analysis*. In *Academy of Management Proceedings (1986 (1), 189-192)*. Briarcliff Manor, NY 10510: Academy of Management.

Jackson, B., & Parry, K. (2011). *A very short fairly interesting and reasonably cheap book about studying leadership*. Sage.

Jacobs, C., Pfaff, H., Lehner, B., Driller, E., Nitzsche, A., Stieler-Lrenz, B., Wasem, J. & Jung, J. (2013). The influence of transformational leadership on employee wellbeing. *Journal of Occupational Environmental Medicine*. 55(7), 772-8. doi: 10.1097/JOM.ob013e3182972ee5.

Javidan, M., Bullough, A., & Dibble, R. (2016). Mind the Gap: Gender Differences in Global Leadership Self-Efficacies. *Academy of Management Perspectives*, 30(1), 59–73.

Jensen, M. C. (1978). Some Anomalous Evidence Regarding Market Efficiency. *Journal of Financial Economics*, 6(2), 95–101.

Jensen, M. C. (1978). Some Anomalous Evidence Regarding Market Efficiency. *Journal of Financial Economics*, 6(2), 95–101.

Jin, S., Seo, M-G. & Shapiro, D. L. (2016). Do Happy Leaders Lead Better? Affective and Attitudinal Antecedents of Transformational Leadership. *The Leadership Quarterly*, 27, 64–84.

Johannsen, M. (2012). *The Importance of Choosing the Right Leadership Style*. Retrieved from <https://www.legacee.com/types-of-leadership-styles/#.WQ3iwXJMRaQ>

Johnson, C. E. (2011). *Meeting the Ethical Challenges of Leadership: Casting Light or Shadow*. SAGE Publications, Incorporated.

Jonker, J., & Pennink, B. (2010). *The Essence of Research Methodology: A Concise Guide for Master and PhD Students in Management Science*. Springer, Heidelberg.

Jung, D., & Avolio, B. (1999). Effects of Leadership Style and Followers' Cultural Orientation on Performance in Group and Individual Task Conditions. *Academy of Management Journal*, 42, 208–218.

Kang, S. K., & Jin, S. (2015). *What are the best practices to assess leadership effectiveness?* Cornell University, Retrieved from ILR School site: <http://digitalcommons.ilr.cornell.edu/student/72>

Kasanen, E., Lukka, K., & Siitonen, A. (1993). The Constructive Approach in Management Accounting Research. *Journal of Management Accounting Research*, (5), 241-264.

Katz, D., Maccoby, N., & Morse, N. C. (1950). Productivity, supervision, and morale in an office situation. Part I. Ann Arbor: University of Michigan, Institute for Social Research.

Kazmi, S. A. Z. (2016). *Fusing Strategic Thinking and Transformational Leadership to Harness new Product Development Team Dynamics for Innovation*. PhD dissertation, University of Vaasa. Retrieved from https://www.univaasa.fi/materiaali/pdf/isbn_978-952-476-663-0.pdf

Kazmi, S. A. Z., & Kinnunen, T. (2012). Deep leadership coaching effectiveness in a corporate scenario, constitutes proactive leadership solution for Optimal Team formation, *European Journal of Social Science (EJSS)*, 31(2), 166-189 - ISSN: 1450-2267

Kazmi, S. A. Z., & Naaranoja, M., (2013). *Comparative approaches of key change management models – a fine assortment to pick from as per situational needs!* Presented in the 3rd Annual International Conference(s) organized by Business

Strategy and Organizational Behavior (BizStrategy 2013), Print ISSN: 2251-1970, E-Periodical ISSN: 2251-1989 : DOI: 10.5176/2251-1970_BizStrategy13.41.

Kazmi, S. A. Z., & Takala, J. (2011). *Aiming for effective Industrial Operational Management through Transformational Leadership-Quest for the best fit as an Optimal Team*, proceedings of the 10th International Conference of the Academy of HRD (Asia Chapter), Kuala Lumpur, Malaysia, 3–6 Dec (2011). ISBN: 978-967-960312-5

Kazmi, S. A. Z., & Takala, J. (2012). *Entrenching Strategic Competitive Advantage through Transformational Leadership!* proceedings of the 3rd International Conference on Industrial Engineering and Operational Management (IEOM-2012), July 3-6, Istanbul, Turkey. pp. 2517-2526.

Kazmi, S. A. Z., Naarananoja, M., & Kytola, J. (2016). Integrating Strategic Thinking and Transformational Leadership for NPD Idea Support Process. *Procedia - Social and Behavioral Sciences*, 229, 387–397. Doi: 10.1016/j.sbspro.2016.07.1

Kazmi, S. A. Z., Naaranoja, M., & Takala, J. (2013). Diverse workforce supported through transformational leadership ensures higher operational responsiveness. *Global Business Review*, 2(4). (Print ISSN: 2010-4804, E-periodical: 2251-2888) DOI: 10.5176/2010-4804_2.4.253

Kazmi, S., J. Takala, and M. Naaranoja. (2015). Sustainable Solution for Competitive Team Information. *Journal of Global Strategic Management*, 9(1), 5–16.

Khatrouch, I., Boujelbene, Y., Kermad, L., & Elmeahmedi, A. (2014). An integrated case-based reasoning and AHP method for team selection. *International Conference on Business, Management and Economics*, 2, 13–18. doi: 10.17706/jsw.10.10.1216-1227

Kiridena, S. B., & Fitzgerald, A. (2006). The Case Study Approach in Operations Management Research. In *ACSPRI Social Science Methodology Conference*, 1–18. Sydney: Australia.

Kouzes, J. M. & Posner, B. Z. (1988). *The Leadership Challenge*. 6th edition, Jossey-Bass, San Francisco.

Künzle, B., Kolbe, M., & Grote, G. (2010). Ensuring patient safety through effective leadership behaviour: A literature review. *Safety Science*, 48, 1–17

Kvist T., Mäntynen R., Turunen H., Partanen P., Miettinen M., Wolf G., & Vehviläinen-Julkunen, K. (2013). How magnetic are Finnish hospitals measured by transformational leadership and empirical quality outcomes? *Journal of Nursing Management*, 21, 152 – 164.

Landis, E. A., Hill, D., & Harvey, M. A. (2014). A Synthesis of Leadership Theories and Styles. *Journal of Management Policy and Practice*. 15(2)

- Lee, N., & Lings, I. (2008). *Doing Business Research: A Guide to Theory and Practice*. SAGE Publications.
- Lehtiranta L., Junnonen J-M., Kärnä, S., & Pekuri L. (2015). *The Constructive Research Approach: Problem Solving for Complex Projects*. In: Designs, Methods and Practices for Research of Project Management. Gower, 2015. Chap. 8, pp. 95–106.
- Leskinen, J., & Takala, J. (2004). *How to develop holistic satisfaction in Finnish ice hockey business?* in Sumanth, D. and Generalis, G. (Eds), *Productivity and Quality Management Frontiers X: Proceedings of the 10th Commemorative ICPQR Conference*, Miami, FL, February 15-19.
- Li, C., Zhao H. B., & Begley, T. M. (2015). Transformational leadership dimensions and employee creativity in China: A cross-level analysis. *Journal of Business Research*, 68, 1149–1156
- Lincoln, Y. S., & Guba, E. G. (2000). *Paradigmatic controversies, contradictions, and emerging confluences*. In Norman K. Denzin & Yvonna S. Lincoln (Eds.). *The handbook of qualitative research* (2nd edition), 163-188. London: Sage.
- Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2011). *Paradigmatic controversies, contradictions, and emerging confluences, revisited*. *The Sage handbook of qualitative research*, 4, 97-128.
- Liu, Y. & Takala, J. (2010a). *Evaluation of global operational competitiveness for crisis management*. Proceedings of the 19th International Conference on Management of Technology – IAMOT 2010. Cairo: International Association for Management of Technology.
- Liu, Y. & Takala, J. (2010b). Competitiveness development of Chinese manufacturing enterprises in global context for crisis management. *International Journal of Management and Enterprise Development*, 9(1), 87-115.
- Maclean, M., Harvey, C. & Chia, R. (2012). Sensemaking, Storytelling and the Legitimization of Elite Business Careers. *Human Relations*, 65(1), 17–40.
- Mann, F. C. (1965). *Toward an understanding of the leadership role in formal organizations*. In *Leadership and productivity*, 68-103, edited by R. Dublin, San Francisco, CA: Chandler.
- Meredith, J.R., Raturi, A., Amoako-Gyampah, K., Kaplan, B. (1989). Alternative research paradigms in operations. *J. Operations Manage.* 8(4), 297–326.
- Mhatre, K. H., & Riggio, R. E. (2014). *Charismatic and transformational leadership: Past, present, and future*. *The Oxford Handbook of Leadership and Organizations*, 221–240.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis*. Thousands Oaks, CA: Sage.

- Misumi, J., & Peterson, M. F. (1985). *The behavioral science of leadership: An interdisciplinary Japanese research program*. The University of Michigan Press.
- Morgan, G. (1986). *Images of organization*. Beverly Hills, CA: Sage.
- Mullins, L. J. (2008). *Essentials of Organizational Behaviour*. Second edition, Pearson Education Limited, England.
- Mumford, M. D., Scott, G. M., Gaddis, B., & Strange, J. M. (2002a). Leading creative people: Orchestrating expertise and relationships. *The Leadership Quarterly*, 13(6), 705–750.
- Namie, G., & Namie, R. (2000). *The bully at work. What you can do to stop the hurt and reclaim the dignity on the job*. Naperville: Sourcebooks, Inc.
- Neuman, W. L. (2011). *Social Research Methods: Qualitative and Quantitative Approaches*. 7th edition, Pearson/Allyn and Bacon, Boston.
- Ng, T. W. H. (2016). Transformational leadership and performance outcomes: Analyses of multiple mediation pathways. *The Leadership Quarterly*. <http://doi.org/10.1016/j.leaqua.2016.11.008>
- Nissinen, V. (2001). *Military Leadership. A Critical Constructivist Approach to Conceptualizing, Modeling and Measuring Military Leadership in The Finnish Defence Forces*. PhD dissertation Helsinki University. Maanpuolustuskorkeakoulun johtamisen laitoksen julkaisusarjan tutkimuksia n: 20. Helsinki: Edita.
- Nissinen, V. (2004). *Deep Leadership*. Talentum, Hämeenlinna. Finland. Second print in 2006.
- Northouse, P. G. (2013). *Leadership: Theory and Practice*, 6th edition. Sage Publications, Inc.
- Noruzy, A., Dalfard, V. M., Azhdari, B., Nazari-Shirkouhi, S., & Rezazadeh, A. (2013). Relations between transformational leadership, organizational learning, knowledge management, organizational innovation, and organizational performance: an empirical investigation of manufacturing firms. *The International Journal of Advanced Manufacturing Technology*, 64(5–8), 1073–1085.
- Ouchi, W. G. (1981). Organizational Paradigms: A Commentary on Japanese Management and Theory Z Organizations. *Organizational Dynamics*, 9(4), 36–43.
- Oyegoke, A. (2011). The constructive research approach in project management research. *International Journal of Managing Project in Business*, 4(4), 573-595.
- Podsakoff, P. M., MacKenzie, S. B., & Bommer, W. H. (1996). Transformational leader behaviors and substitutes for leadership as determinants of employee satisfaction, commitment, trust, and organizational citizenship behaviors. *Journal of Management*, 22, 259-298.

Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behavior. *Leadership Quarterly*, 1, 107-142.

Prinsloo M., (2012b). Towards an Integrated Assessment of Leadership Potential, *Integral Leadership Review*, 12(1), <http://www.integralleadershipreview.com>

Progen, M. D. (2013). *Dynamic Leadership*. Leadership Writing Contest entry. MarineCorps Association & Foundation. Retrieved from: <https://www.mca-marines.org/gazette/dynamic-leadership>.

Ramsden, P. (1998). Managing the Effective University. *Higher Education Research and Development*, 17(3), 347-370.

Reddin, W. J. (1977). An integration of leader-behavior typologies. *Group & Organization Studies*, 2(3), 282-295.

Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (2013). *Qualitative research practice: A guide for social science students and researchers*. SAGE. London.

Robson, C. (2002) *Real World Research*. 2nd edition, Oxford: Blackwell.

Saaty T. L. (1977). A scaling method for priorities in hierarchies, multiple objectives and fuzzy sets. *Journal of Mathematical Psychology*, 15, 234-281.

Saaty T. L. (1980). *The Analytic Hierarchy Process*. McGraw Hill International.

Saaty T. L. (2008). Decision making with the analytic hierarchy process. *International Journal of Services Sciences*, 1(1), 83-98.

Saaty, T. L. (1980). *The Analytic Hierarchy Process: Planning, Priority Setting, Resource Allocation*. New York: McGraw-Hill International Book Co., 1980. ISBN 978-007-054-371-3.

Remenyi, D., Williams, B., Money, A. & Swartz, E. (1998). *Doing Research in Business and Management: An Introduction to Process and Method*. London: Sage.

Saaty, T. L., & Vargas, L. G. (2005). The possibility of group welfare functions. *International Journal of Information Technology & Decision Making*, 4, 167-176.

Sahertian, P., & Soetjipto, B. E. (2011). Improving Employee's Organizational Commitment, Self-Efficacy, and Organizational Citizenship Behavior Through the Implementation of Task-Oriented and Relationship-Oriented Leadership Behavior. *The Business Review, Cambridge*, 17(2), 48-60.

Sanda, Y. N., Anigbogu, N. A., & Molwus, J. J. (2016). Managing Risks in Public Private Partnerships (PPP) in Housing in Nigeria: Methodological Perspective.

Journal of Sustainable Development, 9(5). Retrieved from <http://dx.doi.org/10.5539/jsd.v9n5p152>

Saracoglu, B. O., (2013). Selecting industrial investment locations in master plans of countries. *European Journal of Industrial Engineering*, 7 (4), 416–441.

Saunders, M., Lewis, P. & Thornhill, A. (2009). *Research methods for business students*. Harlow.

Saunders, M., Lewis, P. & Thornhill, A. (2012). *Research Methods for Business Students*. 6th edition, Pearson Education Limited, England.

Saunders, M., Lewis, P. & Thornhill, A. (2015). *Research methods for business students*, Pearson Education Limited., England.

Schaubroeck, J., Lam, S. S. K., & Cha, S. E. (2007). Embracing transformational leadership Team values and the impact of leader behavior on team performance. *Journal of Applied Psychology*, 92, 1020-1030.

Shamoo, A., & Resnik, D. (2015). *Responsible Conduct of Research*. 3rd edition, Oxford University Press.

Singh, J., & Agrawal, A. (2011). Recruiting for Ideas: How Firms Exploit the Prior Inventions of New Hires. *Management Science*, 57(1), 129–150.

Smircich, L. (1983). Concepts of culture and organizational analysis. *Administrative Science Quarterly*, 28(3), 339–58.

Somaya, D., Williamson, I. O. & Lorinkova, N. (2008). Gone but not Lost: The different Performance Impacts of Employee Mobility between Cooperators Versus Competitors. *Academy of Management Journal*, 51(1), 936–953.

Sosik, J. J., Kahai, S. S., & Avolio, B. J. (1998). Transformational Leadership and Dimensions of Creativity: Motivating Idea Generation in Computer-Mediated Groups. *Creativity Research Journal*, 11(2), 111–121.

Stogdill, R. M. (1963). *Manual for the leader behavior description questionnaire-Form XII: An experimental revision*. Bureau of Business Research, College of Commerce and Administration, Ohio State University.

Stogdill, R. M., & Coons, A. E. (1957). Leader behavior: Its description and measurement.

Taggart, M., Koskela, L., & Rooke, J. (2015). *Theory development and the nature of emerging knowledge using an action research methodology*. ARCOM Doctoral workshop on research methodology. University of Huddersfield, UK.

Takala, J. (2002). Analyzing and synthesizing multifocused manufacturing strategies by analytical hierarchy process. *International Journal of Manufacturing Technology and Management*, 4(5), 345-50.

Takala, J., & Uusitalo, T. (2012). *Resilient and proactive utilization of opportunities and uncertainties in service business*. In: Proceedings of the University of Vaasa. Reports 177. 75s.

Takala, J., Hirvelä, H., Hiippala P., & Nissinen, V. (2006). *Management and deep leadership sand cone model for human resource allocation, the second phase of the study*. In: The Eleventh International Conference on Productivity and Quality Research, ICPQR'2005, December 12–15, 2005, New Delhi, India. International Conference on Multinational Enterprises—Multinational Enterprise in the Global Economy, March 14–16, 2006, Taipei, Taiwan. University of Vaasa, Department of Production, Vaasa, Finland.

Takala, J., Hirvelä, H., Hiippala P., & Nissinen, V., (2005). *Management and Deep Leadership Sand Cone model for human resource allocation, the first phase of the study*. In: Fourth International (Automation & Manufacturing) Conference, ATDC (Advanced Technologies for Developing Countries), September 21–24, 2005, Slavonski Brod, Croatia. University of Vaasa, Department of Production, Vaasa, Finland.

Takala, J., Koskinen, J., Liu, Y., Serif Tas, M. & Muhos, M. (2013). Validating knowledge and technology effects to operative sustainable competitive advantage. *Management and Production Engineering Review*, 4(3), 45–54.

Takala, J., Kukkola, A., & Pennanen, J. (2008a). *Prospector, analyzer and defender models in directions of outcome in transformational leadership*. In: The 17th International Conference on the Israel Society for Quality, ISAS 2008, November 18–20, 2008, Jerusalem, Israel. The 10th Management International Conference, MIC 2009, November 25–28, 2009, Sousse, Tunis. University of Vaasa, Department of Production, Vaasa, Finland.

Takala, J., Leskinen, J., Sivusuo, H., Hirvelä, J., & Kekäle, T. (2006b). The sand cone model: illustrating multi-focused strategies. *Management Decision*, 44(3), 335–345.

Takala, J., Pennanen, J., Hiippala, P., Maunuksela, A., & Kilpilä, O. (2008b). Decision Maker's Outcome as a Function of Transformational Leadership. In *Simplify Leadership and Coaching Effectiveness*, edited by T. Kinnunen, 67–86. Lahti: Deep Lead Oy, Aldus Oy.

Tashakkori, A. & Teddlie, C. (1998). *Mixed Methodology: Combining Qualitative and Quantitative Approaches*. Thousand Oaks, CA: Sage.

Tichy, N. M., & Devanna, M. A. (1990). *The transformational leader - The key to global competitiveness*. John Wiley and Sons, USA.

Timilsina, B. (2017). *Gaining and Sustaining Competitive Operations in Turbulent Business Environments. What and How?* PhD dissertation, University of Vaasa. Retrieved from https://www.univaasa.fi/materiaali/pdf/isbn_978-952-476-759-0.pdf

- Tommila, H., Takala, J., Jokitalo, J., & Penttinen, R. (2008). *Effectiveness of transformational leadership training programme*. University of Vaasa, Department of Production. In: The 17th International Conference on the Israel Society for Quality, ISAS 2008, November 18–20, 2008, Jerusalem, Israel.
- Tranfield, D., & Starkey, K. (1998). The Nature, Social Organization and Promotion of Management Research: Towards Policy. *British Journal of Management*, 9, 341–353.
- Tronvoll, B., Brown, S., Gremler, D., & Edvardsson, B. (2011). Paradigms in Service Research. *Journal of Service Management* 22(5), 560–585.
- Tsoukas, H. (1994). Refining common sense: types of knowledge in management studies. *Journal of Management Studies*, 31, 761–80.
- Uusi-Kakkuri, P. (2017). *Transformational leadership and leading creativity*. PhD dissertation, University of Vaasa. Retrieved from https://www.univaasa.fi/materiaali/pdf/isbn_978-952-476-749-1.pdf
- Vaske, J. J., Donnelly, M. P., & Shelby, B. (1993). Establishing management standards: Selected examples of the normative approach. *Environmental Management*, 17(5), 629–643.
- Wahyuni, D. (2012). The research design maze: understanding paradigms, cases, methods and methodologies. *Journal of applied management accounting research*, 10(1), 69–80.
- Wang X-H., Kim, T-Y., & Lee, D-R. (2016). Cognitive diversity and team creativity: Effects of team intrinsic motivation and transformational leadership. *Journal of Business Research*, 69, 3231–3239.
- Wang, G., Oh, I.-S., Courtright, S. H., & Colbert, A. E. (2011). Transformational leadership and performance across criteria and levels: A meta-analytic review of 25 years of research. *Group & Organization Management*, 36(2), 223–270.
- Whitener, E. M. (1997). The impact of human resource activities on employee trust. *Human Resource Management Review*, 7(4), 389–404.
- Williams, L. E. (1998). *Servants of the People: The 1960s Legacy of African-American Leadership*. St Martin's Press, New York, NY.
- Wyk, B. (2012). *Research design and methods*. Part I. University of Western Cape.
- Yammarino, F., & Bass, B. (1990). *Long-term forecasting of transformational leadership and its effects among naval officers: some preliminary findings*. In Measures of Leadership (pp. 171–183). West Orange: Leadership Library of America.
- Yin, R. K. (2003) *Case Study Research: Design and Method*, 3rd edition. London: Sage.

Yin, R. K. (2006). *Handbook of complementary methods in education research*. American research association. Washington DC.

Yin, R. K. (2009). *Case study research - design and methods, 4th edition*. California: Sage Publications Inc.

Yin, R. K. (2011). *Applications of case study research*. Sage Publications Inc.

Yin, R.K. (2014). *Case Study Research: Design and Methods, 5th edition*. California: Sage Publications Inc.

Yukl, G. (1999). An evaluation of the conceptual weakness in transformational and charismatic leadership theory. *Leadership Quarterly*, 10, 285-305

Yukl, G. (2008). How leaders influence organizational effectiveness. *The leadership quarterly*, 19(6), 708-722.

Zaleznik, A. (1977). Managers and leaders: Are they different. *Harvard Business Review*. 55(3), 67-78

Knowledge management and analytical modeling for transformational leadership profiles in a multinational company

11

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INTRODUCTION

It is widely understood that leadership is one of the most critical success factors of knowledge management (KM). Leadership also plays a crucial role in employee performance and organization effectiveness. Especially in a seemingly weak economic environment, it is important that organizations should concentrate more on good leadership as well as KM intelligent to maintain employee's well-being and to increase the company's productivity.

Transformational leadership was first introduced theoretically by Burns (1978, 2003), and developed and conceptualized by Bass as well as many other researchers (Bass and Avolio, 1994; Avolio, 1999; Bass and Riggio, 2006). They explain that transformational leaders influence followers by inspiring followers to think differently and critically, involving followers in decision-making processes and inspiring loyalty, while recognizing and appreciating the different needs of each follower to develop his or her personal potential. Burns (1978, 2003) also explains transformational leadership as a process through which leaders and followers help each other to advance to a higher level of morality and motivation. Takala and Uusitalo (2012) argue that transformational leaders survive best from the challenges because they have the will to forecast and to prepare the organization to the changes fast enough. However, according to Pandey and Pandey (2013), a strategy for the success of organization is how to execute the KM and transformational leadership in organization. Because KM refers to efforts that are done systematically to find, create, access, and apply the intangible capitals of organization and to strengthen the culture of continuous learning and knowledge sharing in organization (Monavarian and Asgari, 2009).

During the recent years, the transformational leadership has been well studied and has become more popular in practice. A recent research shows that many case

studies reveal a trend that 80% of the total sample size represents transformational leadership management style (Kazmi et al., 2015). Surprisingly in a real business environment, for example, in a multinational company, the term of transformational leadership still seems to be unknown to many middle level leaders.

Earlier researchers describe theories and techniques to show the correlations between different leadership styles and performance (Podsakoff et al., 1990; Nissinen 2001; Schaubroeck et al., 2007). In parallel with that, Nissinen (2001) introduces a model of deep leadership that analyzes the relationships between different leadership factors based on a large-scale data collection. Later on, Takala et al. (2005, 2006a) constructed and developed a new conceptual theoretical sand cone model, which can evaluate the direction of outputs, the leadership behavior, as well as the resource allocation of transformational leadership. However, as Takala et al. (2008a) conclude in their studies “in spite of the fact that the promising results from the longitudinal, more than 3 years, study period, it still needs a lot more empirical studies to validate, verify and apply in practice in different leadership situations within dynamic environments.”

Due to the absence of that, in this study we investigate the company management’s transformational leadership skills and examine the analytic transformational leadership indexes reflecting from this unique analytic model. By utilizing descriptive and normative approaches, the findings support a view that the sand cone model is a simple holistic analytic concept to visualize a clear transformational leadership profile. Beside a novel layout for the sand cone model, this study also provides an insight of transformational leadership for the company as well as a new total leadership index and three separate indexes (outcomes index, resource index, and leadership index) that can be utilized further in the sustainable competitive advantage research field. Last but not least, the cutting-edge “specific index” in the findings signify the current status for each certain leadership behavior capability.

In order to surface these results, it is essential to understand the three instruments that we utilize in our theoretical framework, that is, the transformational leadership model, the sand cone model, and the analytic hierarchy process tool, which we present in the next section.

THEORETICAL FRAMEWORK

TRANSFORMATIONAL LEADERSHIP MODEL

Transformational leadership model (TLM) is a tool that has been developed from the basis of transformational leadership (Nissinen, 2001; Takala, 2002; Takala et al., 2005, 2006a; Tommila et al., 2008). This theoretical framework we use has been adopted from educational psychology and leadership training based on the four dimensions of transformational leadership (Bass, 1985) because the model has been designed to enhance leadership coaching in any operational environment (Takala et al., 2008b, 2013; Takala and Uusitalo, 2012). Fig. 11.1 is the transformational leadership model which is adapted from the original research of Takala et al. (2006a),

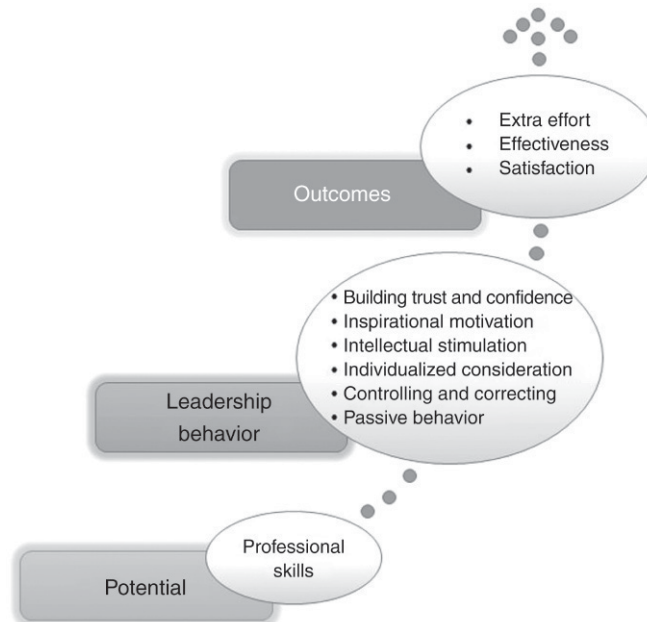


FIGURE 11.1 Transformational leadership model (TLM)

Adapted from Takala et al. (2008b)

which explains that coaching applies to the model as a bridge between theory and practice (Takala et al., 2008b).

Professional skills is the foundation (potential) for leaders. Leadership behavior consists of two main groups of behaviors—passive and controlling behavior—and the four behavioral components that originate from Avolio (1999) and Bass (1985, 1998): first, individualized consideration—connecting with each individual, understanding their needs, drawing out their strengths, and developing and satisfying their personal goals; second, intellectual stimulation—challenging followers to think differently and innovate new solutions to old problems; third, inspirational motivation—communicating a compelling vision and inspiring followers to reach their fullest potential; and fourth, building trust and confidence, which is developed from the original behavior of idealized influence—being a role model and involving followers to accomplish more than what they would do otherwise.

SAND CONE MODEL

Sand cone model is a specific concept that has multidimensional or hierarchical aspects to visualize the structure of leadership behaviors that was developed by Takala et al. (2005, 2008b) as shown in Fig. 11.2. In the following paragraphs in this section, green refers to the numerals that are underlined, yellow refers to those in ital>, and red refers to those in boldface.

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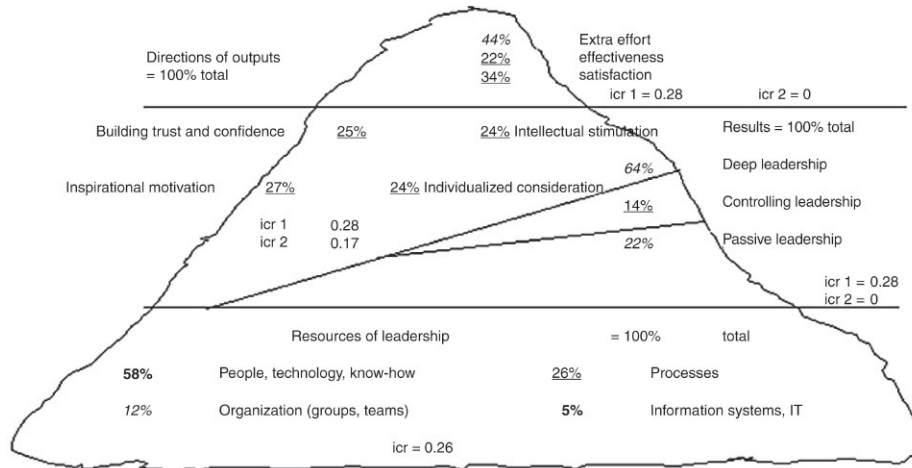


FIGURE 11.2 Sand cone model (Takala et al., 2008b)

We utilize this practical model as the second theoretical framework in this study because the model has a dynamic characteristic with cumulative layers for different performance dimensions. This multifocused concept is simple and also visual, which assists the identification and evaluation of leadership behaviors or leadership performances.

The model consists of four main parts: first, resources are at the ground level of the model; the next level is shared with cornerstones (left) and transformational leadership (right); and the highest level is the directions of outputs. The values of these variables are colored by using the traffic light technique defined by Takala et al. (2008b). The green stands for strength in the current variable, the yellow stands for possibility for development, and the red stands for focus in the development potential. In the black and white printed version, the green color is signified with blank, yellow with dots and red with dashes. The sand cone traffic light values can be found in the appendix 1.

Takala et al. (2008b) defines the optimal balance of transformational leadership as follows: directions of outputs (each 33%), cornerstones (each 25%), and resources (each 25%) are equalized, while the results with dynamic leadership (82%), passive and controlling (each 9%). Fig. 11.2 is adapted and we reillustrate it with a more comprehension view in Fig. 11.3.

The transformational leadership sand cone model in Fig. 11.3 is supported by the foundation resources (similar to arms and legs) that consists of processes (PC), information systems (IT), organizational groups, teams (OR) and people, technology, and know-how (PT). Next, the results level (like the body) shows three categories of leadership that is, dynamic, passive- and controlling; where dynamic plays a significant role, as Progen (2013) defines dynamic leadership is a dual-focused form of adaptive leadership that allows a leader to react to changes by being proactive. The third level is the cornerstones (like the heart) where the group of three I's: intellectual stimulation (IS), individualized consideration (IC), inspirational motivation

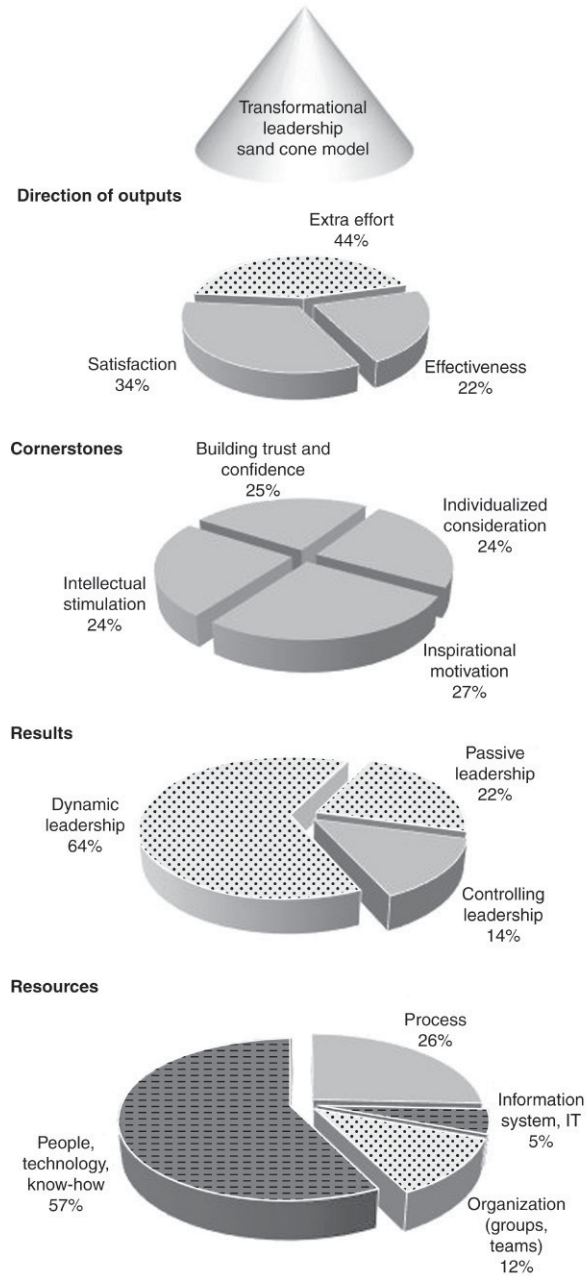


FIGURE 11.3 Transformational leadership sand cone model. In this traffic light model, the portions left blank indicates the areas in green, those filled with dots refer to yellow, and those with dashed lines refer to red.

(IM), and building trust and confidence (BT) was built. Finally, the fourth level of the sand cone model, the direction of outputs (like the eyes), is divided into three types of performances: effectiveness (EF), satisfaction (SA), and extra effort (EE). Above all, the top level direction of outputs and the dynamic leadership performance play an important role in this transformational leadership sand cone model.

ANALYTIC HIERARCHY PROCESS (AHP)

The third theoretical framework we use in this study is the analytic hierarchy process (AHP), which is a multicriteria decision method based on mathematics and psychological concepts through pair-wise comparisons. AHP was innovated and developed by Saaty in 1970 and has been widely studied and developed since then. The evaluation among different factors help us in making decisions in complex situations. The model has been used around the world in a wide variety of decision situations, in fields such as business, industry, healthcare, education, and government (Saracoglu, 2013). In this study, Expert Choice software (which implements AHP) was used for the calculation, where qualitative objects are converted to quantitative values (Saaty, 1982, 2008a, 2008b). Qualitative objects are 30 pair-wise comparison questionnaires that were originally invented by Takala et al. (2008a), which are based on the 10 dimensions of deep leadership (Nissinen, 2006) and have been comprehensively improved since then. In the three sections that follow, we address research environment and methods first, followed by the results, then the discussion, and finally the conclusions.

RESEARCH ENVIRONMENT AND METHODS

This study is a cooperative venture between the University of Vaasa and the Learning & Development department of a multinational energy company. Due to confidentiality matters, the real name of the company as well as the different departments will not be revealed.

Regarding the method, we utilize the descriptive research approach, which means we gather the facts from participants and try to describe them in an accurate way. The primary data of this study for examining and analyzing the leadership profiles and total leadership indexes was gathered through a questionnaire. Sample and procedures for data collection were: a total of 30 email invitations to complete a web-based questionnaire were sent out to the selected respondents, that is, middle managers who are working in four business units; each of these managers/leaders has at least 10 subordinates or more. Higher level managers (general managers and directors) were excluded from this study because their responsibilities and decision-making behavior sometimes differed from the middle managers.

The survey resulted in an overall response rate of 87% (26/30); 77% of the participants were men (20/26) and 23% of participants were women (6/26). In terms of different cultures in this global company, 64% of these managers have subordinates from other nationalities, and 26% have subordinates with the same nationality.

In terms of working condition steadiness, 32% of these leaders have recently or during this year had some significant responsibility changes (such as position, work conditions, or location). This last factor was taken into account because it may have some impact on the leaders' decision-making behavior, which might reflect on the responses.

In this case study, only matrixes with the inconsistency ratio (icr) value of 0.3 or lower can be considered as reliable answers and can be used to analyze further. Conclusively, 73% (18/26) responses were usable, and 27% (8/26) responses were discarded due to high icr. Finally, the quantitative results calculated by the AHP tool will be applied to the concept and will be further analyzed in order to form a unique profile for each respondent (Fig. 11.3 for an example of a TL profile).

TRANSFORMATIONAL LEADERSHIP INDEX (TLI)

In order to get TLI, the following four equations have been used and calculated in Excel (Takala et al., 2008b, 2013).

Outcome index (OI):

$$OI = 1 - \text{MAX}(\text{ABS}((1/3) - (EF/100)); \text{ABS}((1/3) - (SA/100)); \text{ABS}((1/3) - (EE/100)))$$

EF, effectiveness; SA, satisfaction; EE, extra effort.

Leadership index (LI):

$$LI = (DL/100) \times (1 - (\text{MAX}(PL; CL)/100)) \times (1 - \text{ABS}((1/4) - (\text{MAX}(IC; IM; IS; BT)/100)))$$

DL, dynamic leadership; PL, passive leadership; CL, controlling leadership; IC, individualized consideration; IM, inspirational motivation; IS, intellectual stimulation; BT, building trust and confidence.

Resource index (RI):

$$RI = (1 - (PT/100)) \times ((3 \times \text{MIN}(PC; IT; OR))/100)$$

PT, people, technology, know-how; PC, processes; IT, information systems; OR, organization (groups, teams).

Transformational leadership index (TLI):

$$TLI = OI \times LI \times RI$$

RESULTS

TRANSFORMATIONAL LEADERSHIP PROFILES

A similar profile as Fig. 11.3 is calculated for each leader. Despite the fact that each leader has a unique profile and a specific TL index, consolidation results can be visualized based on the color (light gray, white, and dark gray). These colors provide a good overview for the common strengths or weaknesses of the whole group. Tables 11.1–11.4 (in the appendix) demonstrate a results' consolidation, where column

“group 1” to “group 7” shows the values calculated by the AHP tool converted from the qualitative responses. The four columns with colors are the four main parts of the sand cone model: cornerstones, resources, outputs, and results. The last column shows the values of four indexes: OI, LI, RI, and TLI. In the black and white printed version, the colors in the five tables (11.1 to 11.5) are changed as follows: the green color is signified with a check mark, yellow with an exclamation mark, and red with an x mark.

Table 11.1 (in the appendix 2) indicates that the strength of this department is in controlling leadership (CL) because 100% (5/5) are in green, that is, their behavior in current controlling is good. Second strength of this group is on satisfaction (SA) with 80% (4/5) in green and 20% (1/5) in yellow. However, the most weaknesses of this group of leaders are in dynamic leadership (DL) and passive leadership (PL), with 80% (4/5) in red.

Table 11.2 (in the appendix 3) shows the consolidated results for department 2, similarly as in consolidation 1, the strength of this group of leaders is in CL; 100% (4/4) are in green. However the important weaknesses are on PL and individualized consideration (IC), that is, 100% (4/4) and 75% (3/4) respectively.

Table 11.3 (in the appendix 4) shows the consolidated results for department 3. The strength of this group is on effectiveness (EF) and CL with 80% (4/5) in green for both. However the common weaknesses of this department are on PL and people and technology (know-how, PT) at 80% (4/5) and 60% (3/5) respectively.

Finally, Table 11.4 (in the appendix 5) is a consolidation of department 4, similar to the three previous departments, where the strength is also at CL, 100% (4/4) in green. Yet, the improvement should focus on PL, 75% (3/4) in red.

To summarize, the total general results reveal the transformational leadership *strengths* of these participation leaders are 95% (17/18) in controlling leadership and the *weaknesses* are 72% (13/18) in passive leadership.

In the following section we utilize the normative research approach, which means we try to point out particular details in which the object of the study can be improved as well as general conclusions that derive from the results.

TOTAL LEADERSHIP INDEX—REEXAMINATION

Two graphs of total leadership index (TLI) for all respondents follow:

Fig. 11.4 shows the TLI graph for all responses that was calculated according to the four existing equations.

Fig. 11.5 shows the TLI graph calculated based on the absolute value (ABS), which means every value of a piece of pie in the sand cone model will be compared with the optimal value. By using ABS we will always get the number as positive (or zero), but never negative. The reason for utilizing ABS was because the TLI index obtained from four previous equations was not compatible with its profiles. For example, the profile picture of E16 has more green color than the profile of M7, but the TLI index of M7 is higher than the TLI index of E16 (M7 and E16 are the codes of two respondents). This discrepancy can be easily recognized when comparing S8 versus S10, Su19 versus E5, etc.

As $TLI = OI \times LI \times RI$, a careful test through each separate index shows that the equation of OI is most likely correct because there is no deviation between the profile

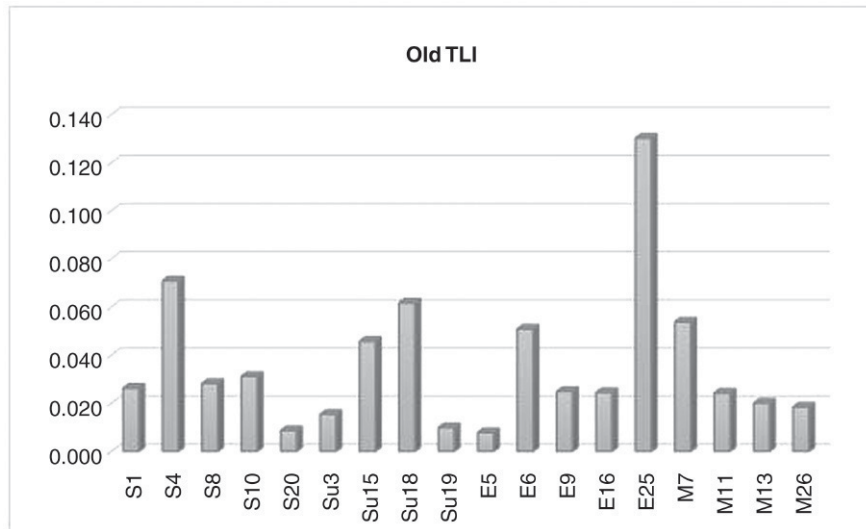


FIGURE 11.4 Old total leadership index

color and the OI index; if we place $EF = 33$, $SA = 33$, and $EE = 33$ in the OI equation 1, we will get the optimal values $OI = 0.996$.

Next, the leadership index (LI) calculation requires both values from cornerstones and results; if we place the optimal value for $IC = IM = IS = BT = 25$; and optimal value for $PL = 9$, $CL = 9$, and $DL = 82$; in the LI equation, we will get $LI = 0.746$.

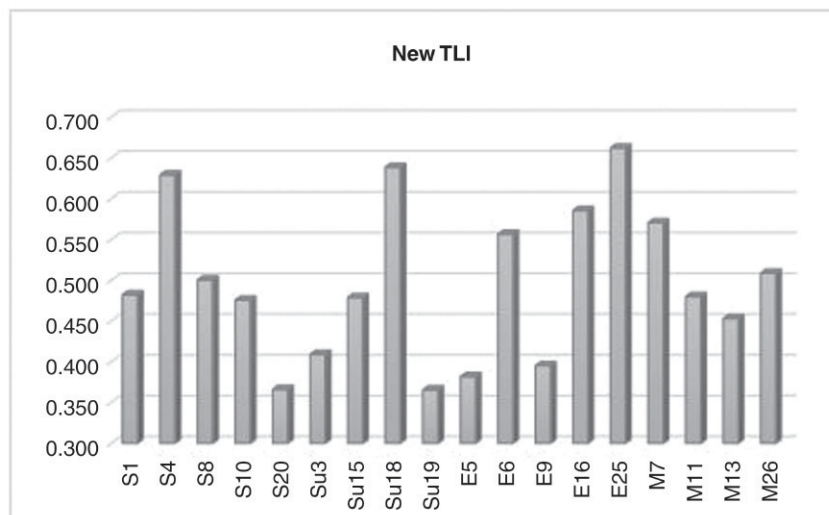


FIGURE 11.5 New total leadership index

Table 11.5 Leadership Index (LI), Respondent S8 Versus S10

S8				S10			
CORNERSTONES		RESULTS		CORNERSTONES		RESULTS	
IC, IM, IS, BT		PL, CL, DL		IC, IM, IS, BT		PL, CL, DL	
!	11	✘	41.6	!	17	✘	45.8
!	30	✓	12.6	!	18	✓	6.3
✓	25	✘	45.8	!	32.7	✘	47.9
!	34			!	32.5		
LI = 0.24				LI = 0.24			

In comparison between responses S8 and S10 in Table 11.5, for print version, three symbols to replace the colors as follows: a cross (X) stands for red; an exclamation mark (!) stands for yellow; and a tick or check mark stands for green. The green color of S8 already reveals that S8 performance is better than S10; however, the calculation with the LI equation will give discrepancy results: LI of S8 is equal to LI of S10.

Finally, to the resource index (RI), if we place PC = IT = OR = PT = 25 in the RI equation, we will get the optimal RI = 0.562.

In comparison between responses E1 and M2 versus Optimal in Table 11.6, the optimal of RI is 0.562, while the RI for E1 = 0.547, although the profile of E1 has IT and PT on red. Moreover, the largest discrepancy here is the RI of M2 = 0.565, which means the RI index of M2 is *higher than* the optimal index (0.562).

In most cases, the correctness can sometimes be violated because the equations of OI and LI utilizes MAX and the equations of RI utilizes MIN, which means the best values (or the variable in the optimal array) may be taken into account while the worst were ignored, or vice versa. For example, between three values—6, 45, and 49—the MAX result is 49 and this will be taken into account, but 6 and 45 will be ignored. Or with the MIN in an equation, for example, with the same three values 6, 45, and 49, the MIN result is 6 and this will be taken into account while 45 and 49 will be ignored. Therefore, this study suggests a more accurate TLI by using the “absolute value” (ABS) instead of MAX or MIN. By using the absolute value for every weight, we will always acquire the precise value of how far the current performance is from the optimal performance.

Table 11.6 Resource Index (RI), E1 and M2 Versus Optimal

Optimal	E1	M2
RESOURCES	RESOURCES	RESOURCES
PC, IT, OR, PT	PC, IT, OR, PT	PC, IT, OR, PT
25	29.2	27.8
25	46.5	48.7
25	19.2	19.6
25	5	3.9
RI = 0.562	RI = 0.547	RI = 0.565

Table 11.7 New Transformational Leadership Index

TL factors	Optimal	Result	Abs(Opt. - Result)
IC	25	30.4	5.4
IM	25	29	4
IS	25	20.3	4.7
BT	25	20.3	4.7
PC	25	13.4	11.6
PT	25	48.4	23.4
IT	25	15.5	9.5
OR	25	22.8	2.2
EF	33.3	12.2	21.1
SA	33.3	32	1.3
EE	33.3	55.8	22.5
PL	9	26	17
CL	9	11	2
DL	82	63	19
	400		148
		1- (148/400)	0.63

Table 11.7 shows an example of a new transformational leadership index calculation.

The column “optimal” shows the optimal values, the column “result” points out the results from responses, and the column “ABS” contains absolute values (comparing optimal values and result values). In this example, 148 is the sum of ABS values and 0.630 is the total leadership index. The higher the index, the better the performance.

Following new equations for TL indexes are proposed:

$$\mathbf{TLI} = 1 - \frac{\sum \text{ABS values}}{\sum \text{Optimal values}} \quad (11.1)$$

$$\mathbf{Specific\ index} = 1 - \left(\frac{\text{Absolute difference}}{\text{Maximal difference}} \right) \quad (11.2)$$

$$\mathbf{New\ OI} = \text{Mean (Specific index \{EF, SA, EE\})} \quad (11.3)$$

$$\mathbf{New\ LI} = \text{Mean (Specific index \{IC, IM, IS, BT, PL, CL, DL\})} \quad (11.4)$$

$$\mathbf{New\ RI} = \text{Mean (Specific index \{PC, PT, IT, OR\})} \quad (11.5)$$

Table 11.8 demonstrates an example of how to calculate these new indexes, that is, new TLI, specific index, new OI, new LI, and new RI. All acronyms mentioned here were explained in the previous transformational leadership index section.

Table 11.9 illustrates a consolidation of old TLI versus new TLI. A verification of these two indexes with the profile pictures reveals that the new indexes are accurate and compatible with the profile, that is, the closer the results to the optimal values, the higher the TLI index. And the highest or the best index is always equal to 1. In addition, the *specific index* (as shown in Table 11.8) is the actual result for every certain behavior (specific index traffic light values can be found in the appendix 6). Furthermore, the new TLI is also practical and can be used with one or two decimals, while the old index has to use three decimals or more because the old TLI was smaller, for example, 0.003; see Figs. 11.4 and 11.5 for graphs of old and new TLI, respectively.

DISCUSSION

This study supports the empirical evidence that “Leadership behavior can be effectively visualized in a holistic way by using a Sand Cone model” (Takala et al., 2006a, 2006b). The sand cone model is definitely simple to use; the common traffic light defined in the sand cone model could help leaders easily recognize what they should put more focus on. The colorful profile is a guideline for a leader to follow and improve their behavior as well as their decision making in order to get maximal results of the outcomes.

Regarding the transformational leadership capability for the participating leaders in this multinational company, the results show that 72% of total respondents (13/18) have passive leadership in red; this should be further investigated inside the company. Because recent findings of Harold and Holtz (2014) research proved that passive leadership is associated with lower perceived support, weaker organizational identity, less citizenship behavior, and greater workplace incivility. As mentioned previously, leadership or especially transformational leadership is the most fundamental key success factors of KM; researchers believe that this factor will support the organization’s IQ, it will make the organization smarter. However, the toughest issue is how to make leaders change KM, how to get leaders to think differently. As Nancy Dickson, president, Common Knowledge Associates, expresses at the KMWorld 2015 conference “What we’ve wanted is the support of top management to provide the resources, to encourage people to share their knowledge and so forth. We’ve never asked the top of the organization themselves to do knowledge management.” In a turbulent business world, in case of complexity issues the leaders’ roles in KM are to share knowledge, to get people involved, to keep people informed, to wake their interest, and make them feel part of the journey, “on the move together.”

Although the findings of this study are based on responses from high experienced managers from four different business units, and each of them has at least 10 or more subordinates, one limitation is the relatively small sample of respondents compared with the total amount of managers in a large company.

Table 11.8 Specific Index, New Outcome Index, New Leadership Index, New Resource Index

TL components and factors	Optimal values	Response values	Absolute difference	New TLI	Specific index	New OI	New LI	New RI
Directions of outputs								
Effectiveness EF	33.3	12.2	21.13		0.68			
Satisfaction SA	33.3	32	1.33		0.98			
Extra Effort EE	33.3	55.8	22.47		0.66			
Cornerstones								
Individualized consideration IC	25	30.4	5.40		0.93			
Inspirational motivation IM	25	29	4.00		0.95			
Intellectual stimulation IS	25	20.3	4.70		0.94			
Building trust and confidence BT	25	20.3	4.70		0.94			
Results								
Passive leadership PL	9	26	17.00		0.81			
Controlling leadership CL	9	11	2.00		0.98			
Dynamic leadership DL	82	63	19.00		0.77			
Resources								
Process PC	25	13.4	11.60		0.85			
People, technology, know-how PT	25	48.4	23.40		0.69			
Information systems, IT	25	15.5	9.50		0.87			
Organisation (groups, teams) OR	25	22.8	2.20		0.97			
Total	400		148.43	0.629		0.78	0.90	0.84

*Maximal difference (in Eq. 11.2) is the worst case scenario

Maximal difference EF = SA - EE = (100 - 33,3) = 66,7

Maximal difference IC = IM = IS = BT = (100 - 25) = 75

Maximal difference PL = CL = 91

Maximal difference DL = 82

Maximal difference PC = PT = IT = OR = (100 - 25) = 75

Table 11.9 Old TLI Versus New TLI

Respondents	Old TLI	New TLI
S1	0.026	0.482
S4	0.072	0.629
S8	0.028	0.500
S10	0.031	0.476
S20	0.010	0.366
Su3	0.019	0.409
Su15	0.046	0.479
Su18	0.062	0.638
Su19	0.010	0.365
E5	0.008	0.382
E6	0.059	0.556
E9	0.025	0.395
E16	0.024	0.586
E25	0.130	0.662
M7	0.054	0.571
M11	0.024	0.480
M13	0.020	0.453
M26	0.027	0.509

CONCLUSIONS

This is one of the first studies to empirically examine participants' transformational leadership profile and TL indexes in a global company. Additionally, this study's uniqueness is the new proposal layout of the sand cone model and the new equation of TL indexes as well as the specific index that provides accurate assessments to the respondents.

Generally, results show that every individual leader has a unique profile; depending on the leaders' responsibilities in their current situation, each of them has one or more specific areas that they should focus on to improve their own leadership styles. Nevertheless, the results clearly support the view that the sand cone model is beneficial in analyzing the transformational leadership profile. The common traffic light colors give clear indications to the leader of good areas and areas to improve.

We expect that this new approach with new accurate transformational leadership indexes will significantly increase the use of this analytic modeling concept for transformational leadership profiles. It will improve the self-awareness from each leader and to help the organization to having better understanding of their current transformational leadership capabilities. The results may convey to the company

new insights into developing training programs to support leaders in improving their transformational leadership behaviors as well as to develop their own profession. In addition, this simple evaluation concept can also be utilized further in recruitment, selection, or promotion purposes.

Finally, as self-awareness is the first step of successful knowledge management, we also expect that this finding may contribute to the company a better perspective into improving KM because transformational leadership capability and knowledge management have reciprocal effects. In a good KM business environment, when transformational leaders make decisions, they are always well informed with the latest research, which contributes to faster and better decisions. This implies that knowledge management is getting the right intelligence, from the right person, at the right time, and to make the right decision (Leondes, 2005).

As mentioned earlier, one limitation of this study is the relatively small sample compared with the total amount of leaders in a multinational company. Therefore, further research with a larger sample of respondents/leaders who are located in Finland as well as in other countries would be needed. More research to prove the new transformational leadership indexes as well as to compare the transformational leadership trend among different areas, for example, private industries versus public sectors and profit versus nonprofit organizations, is also suggested.

REFERENCES

- Avolio, B., 1999. *Full Leadership Development: Building the Vital Forces in Organization*. Sage Publications, Thousand Oaks.
- Bass, B.M., 1985. Leadership and performance beyond expectations. *Free Press, New York. Hum. Res. Manage.* 25 (3), 481–484.
- Bass, B.M., 1998. *Transformational Leadership: Industrial, Military, and Educational Impact*. Lawrence Erlbaum Associates, Mahwah, New Jersey, London.
- Bass, B.M., Avolio, B.J. (Eds.), 1994. *Improving Organizational Effectiveness Through Transformational Leadership*. Sage Publications, Thousand Oaks, CA.
- Bass, B.M., Riggio, R.E., 2006. *Transformational Leadership*, second ed. Lawrence Erlbaum Associates, Inc, Mahwah, NJ.
- Burns, J.M., 2003. *Transforming Leadership: A New Pursuit of Happiness*. Atlantic Monthly Press, New York.
- Harold, C., Holtz, B., 2014. The effects of passive leadership on workplace incivility. *J. Org. Behav.* 36 (1), 16–38.
- Kazmi, S.A., Takala, J., Naaranoja, M., 2015. Sustainable solution for competitive team formation. *J. Global Strateg. Manage.* 17.
- Kinnunen, T., 2013. *Simply Leadership and Coaching Effectiveness*. Aldus Oy Lahti.
- Leondes, C.T., 2005. *Intelligent Knowledge-Based Systems: Business and Technology in the New Millennium*. In: Leondes, C.T. (Ed.). Kluwer Academic Publishers, Boston.
- Monavarian, A., Asgari, N., 2009. *Organization in Industry, Information and Wisdom Era*. Tehran University Publications, Tehran.

- Nissinen, V., 2001. Military Management: Development of Leadership Behavior in the Finnish Defence Forces. Publication Series. 1, Research reports.
- Nissinen, V., 2006. Deep leadership. Talentum oyj.
- Nissinen, V., 2004. Deep Leadership. Talentum Oy, Hämeenlinna, Finland, second print in 2006.
- Pandey, N., Pandey, A., 2013. Knowledge management through transformational leadership. *Int. J. Adv. Res. Manage. Social Sci.* 2 (9).
- Podsakoff, P.M., MacKenzie, S.B., Moorman, R.H., Fetter, R., 1990. Transformational leader behaviors and their effects on followers trust in leader, satisfaction, and organizational citizenship behaviors. *Leadership Q.* 1, 107–142.
- Progen, M.D., 2013. Dynamic Leadership. Leadership Writing Contest entry. MarineCorps Association & Foundation. Available from: <https://www.mca-marines.org/gazette/dynamic-leadership>.
- Saaty, T.L., 1982. Decision Making for Leaders. The Analytical Hierarchy Process for Decisions in a Complex World. Wadsworth, Belmont, CA. Latest edition, revised (2000), RWS Publications, Pittsburgh.
- Saaty, T.L., 2008a. Decision making with the analytic hierarchy process. *International Journal of Services Sciences.* 1 (1), 83.
- Saaty, T.L., 2008b. Decision Making for Leaders: The Analytic Hierarchy Process for Decisions in a Complex World. RWS Publications, Pittsburgh, PA.
- Saracoglu, B.O., 2013. Selecting industrial investment locations in master plans of countries. *Eur. J. Ind. Eng.* 7 (4), 416–441.
- Schaubroeck, J., Lam, S.S.K., Cha, S.E., 2007. Embracing transformational leadership: team values and the impact of leader behavior on team performance. *J. Appl. Psychol.* 92, 1020–1030.
- Takala, J., 2002. Analyzing and synthesizing multifocused manufacturing strategies by analytical hierarchy process. *Int. J. Manuf. Technol. Manage.* 4 (5), 345–350.
- Takala, J., Hirvelä, H., Hiippala P., Nissinen, V., 2005. Management and Deep Leadership Sand Cone model for human resource allocation, the first phase of the study. In: Fourth International (Automation & Manufacturing) Conference, ATDC (Advanced Technologies for Developing Countries), September 21–24, 2005, Slavonski Brod, Croatia. University of Vaasa, Department of Production, Vaasa, Finland.
- Takala, J., Hirvelä, H., Hiippala P., Nissinen, V., 2006a. Management and deep leadership sand cone model for human resource allocation, the second phase of the study. In: The Eleventh International Conference on Productivity and Quality Research, ICPQR'2005, December 12–15, 2005, New Delhi, India. International Conference on Multinational Enterprises—Multinational Enterprise in the Global Economy, March 14–16, 2006, Taipei, Taiwan. University of Vaasa, Department of Production, Vaasa, Finland.
- Takala, J., Leskinen, J., Sivusuo, H., Hirvelä, J., Kekäle, T., 2006b. The sand cone model: illustrating multi-focused strategies. *Manage. Decis.* 44 (3), 335–345.
- Takala, J., Koskinen, J., Liu, Y., Tas, M.S., Muhos, M., 2013. Validating knowledge and technology effects to operative sustainable competitive advantage. *Manage. Prod. Eng. Rev.* 4 (3), 45–54.
- Takala, J., Kukkola, A., Pennanen, J., 2008a. Prospector, analyzer and defender models in directions of outcome in transformational leadership. In: The 17th International Conference on the Israel Society for Quality, ISAS 2008, November 18–20, 2008, Jerusalem, Israel. The 10th Management International Conference, MIC 2009, November 25–28, 2009, Sousse, Tunis. University of Vaasa, Department of Production, Vaasa, Finland.

- Takala, J., Pennanen, J., Hiippala, P., Maunuksela, A., Kilpiö, O., 2008b. Decision maker's outcome as a function of transformational leadership. In: Kinnunen, T. (Ed.), *Simplify Leadership and Coaching Effectiveness*. Deep Lead Oy, Aldus Oy, Lahti, 144 pages, pp. 67–86. University of Vaasa, Department of Production, Vaasa, Finland.
- Takala, J., Uusitalo, T., 2012. Resilient and proactive utilization of opportunities and uncertainties in service business. In: *Proceedings of the University of Vaasa. Reports 177*.
- Tommila, H., Takala, J., Jokitalo, J., Penttinen, R., 2008. Effectiveness of transformational leadership training programme. University of Vaasa, Department of Production. In: *The 17th International Conference on the Israel Society for Quality, ISAS 2008*, November 18–20, 2008, Jerusalem, Israel.

APPENDIX 1: SAND CONE TRAFFIC LIGHT VALUES IN THE BLACK AND WHITE PRINTED VERSION, THE GREEN COLOR IS SIGNIFIED WITH A CHECK MARK, YELLOW WITH AN EXCLAMATION MARK, AND RED WITH AN X MARK.

Directions of outputs/optimal 33%

50–100 (✖)
40–50 (!)
20–40 (✓)
10–20 (!)
0–10 (✖)

Cornerstones/optimal 25%

40–100 (✖)
30–40 (!)
20–30 (✓)
10–20 (!)
0–10 (✖)

Dynamic Leadership/optimal 82%

70–100 (✓)
50–70 (!)
0–50 (✖)

Controlling and passive leadership/optimal 9%

25–100 (✖)
15–25 (!)
0–15 (✓)

Resources/optimal 25%

40–100 (✖)
30–40 (!)
20–30 (✓)
10–20 (!)
0–10 (✖)

APPENDIX 2

Table 11.1 Consolidation 1

S1													
CORNERSTONES			RESOURCES			OUTPUTS			RESULTS				
Group 1	Group 2	IC, IM, IS, BT	Group 3	PC, PT, IT, OR	Group 4	Group 5	EF, SA, EE	Group 6	Group 7	PL, CL, DL	OI	0.86817	
36.8	18.2	18.2	22	22	70.1	16.3	43.2	23.8	52.8	38.3			
20	5.5	5.5	57.4	57.4	19.3	54	36.65	13.7	91	11.4	LI-1	0.26349	
57	36.2	36.2	9	9	106	29.7	20.15	62.5	38.1	50.3	R	0.11502	
36.4	40.1	40.1	11.6	11.6	CR = 26.8%			CR = 1.9%			CR = 11.3%		
CR = 41.7%			CR = 26.1%			CR = 26.8%			CR = 1.9%			CR = 11.3%	
S4													
CORNERSTONES			RESOURCES			OUTPUTS			RESULTS				
Group 1	Group 2	IC, IM, IS, BT	Group 3	PC, PT, IT, OR	Group 4	Group 5	EF, SA, EE	Group 6	Group 7	PL, CL, DL	OI	0.77533	
12.5	48.4	30.4	13.4	13.4	12.2	13.5	12.2	16	35.7	26			
38.3	19.8	29	48.4	48.4	32	28.1	4.9	14.9	7.5	11	LI-1	0.44103	
27.3	13.2	20.3	15.5	15.5	55.8	58.4	55.8	69.1	56.7	63	R	0.20743	
21.9	18.6	20.3	22.8	22.8	CR = 1.9%			CR = 0.6%			CR = 5.6%		
CR = 7.9%			CR = 8.8%			CR = 14.1%			CR = 0.6%			CR = 5.6%	
S8													
CORNERSTONES			RESOURCES			OUTPUTS			RESULTS				
Group 1	Group 2	IC, IM, IS, BT	Group 3	PC, PT, IT, OR	Group 4	Group 5	EF, SA, EE	Group 6	Group 7	PL, CL, DL	OI	0.77967	
9.6	11.5	11	10.5	10.5	10	12.6	11.3	41.6	24.7	41.6			
55.1	5.6	30	52.7	52.7	43.3	41.6	42.5	12.6	13.1	12.6	LI-1	0.24340	
8.8	40.8	25	20.7	20.7	46.6	45.8	46.2	45.8	62.2	45.8	R	0.14900	
26.5	42.2	34	16.1	16.1	CR = 0.6%			CR = 1%			CR = 22.7%		
CR = 9.7%			CR = 17.6%			CR = 1%			CR = 1%			CR = 22.7%	
S10													
CORNERSTONES			RESOURCES			OUTPUTS			RESULTS				
Group 1	Group 2	IC, IM, IS, BT	Group 3	PC, PT, IT, OR	Group 4	Group 5	EF, SA, EE	Group 6	Group 7	PL, CL, DL	OI	0.76667	
6.4	27.8	17	13.3	13.3	7.7	11.7	10	23.5	45.8	45.8			
27.1	8.4	18	24.6	24.6	46.2	26.8	36	11.3	6.3	6.3	LI-1	0.23963	
21.4	44	32.7	7.5	7.5	46.2	61.4	54	65.2	47.9	47.9	R	0.16965	
45.1	19.9	32.5	54.7	54.7	CR = 0%			CR = 14.1%			CR = 0.2%		
CR = 5.6%			CR = 19.1%			CR = 7.7%			CR = 14.1%			CR = 0.2%	
S20													
CORNERSTONES			RESOURCES			OUTPUTS			RESULTS				
Group 1	Group 2	IC, IM, IS, BT	Group 3	PC, PT, IT, OR	Group 4	Group 5	EF, SA, EE	Group 6	Group 7	PL, CL, DL	OI	0.78133	
28.5	13.6	13.6	17.1	17.1	32.7	16	24.4	46.6	46.6	46.6			
22.7	22.4	22.4	61.8	61.8	26	14.9	20.4	10	10	10	LI-1	0.16301	
37.3	54.5	54.5	15.2	15.2	41.3	69.1	55.2	43.3	43.3	43.3	R	0.06761	
11.5	9.5	9.5	5.9	5.9	CR = 0.6%			CR = 0.6%			CR = 0.6%		
CR = 41.1%			CR = 12.3%			CR = 5.6%			CR = 0.6%			CR = 0.6%	
S20													
CORNERSTONES			RESOURCES			OUTPUTS			RESULTS				
Group 1	Group 2	IC, IM, IS, BT	Group 3	PC, PT, IT, OR	Group 4	Group 5	EF, SA, EE	Group 6	Group 7	PL, CL, DL	OI	0.00851	
28.5	13.6	13.6	17.1	17.1	32.7	16	24.4	46.6	46.6	46.6			
22.7	22.4	22.4	61.8	61.8	26	14.9	20.4	10	10	10	LI-1	0.16301	
37.3	54.5	54.5	15.2	15.2	41.3	69.1	55.2	43.3	43.3	43.3	R	0.06761	
11.5	9.5	9.5	5.9	5.9	CR = 0.6%			CR = 0.6%			CR = 0.6%		
CR = 41.1%			CR = 12.3%			CR = 5.6%			CR = 0.6%			CR = 0.6%	

APPENDIX 3

Table 11.2 Consolidation 2

Su3	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	RESULTS	OL	0.69933
	7.5	7.3	5.7	27.2	17.4	12.5	48.1	Pl, Cl, DL	OI	
	44.5	9.1	63.5	9.3	19.2	7.9	5.6	30.3		
	14.1	58.5	22.3	63.4	63.4	79.6	46.3	LI-1		0.35292
	33.8	25	33.8	8.5	8.5	CR = 5,6 %	CR = 0,2%	RI		0.06242
	CR = 1,7%	CR = 27,8 %	CR = 23,9 %	CR = 30,8 %	CR = 1 %			TLI	Su3	0.01540
Su15	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	RESULTS <td>OL</td> <td>0.80967</td>	OL	0.80967
	7.1	16.1	7.1	28.5	14.3	20.2	47.2	Pl, Cl, DL	OI	
	61	8.6	61	32.5	42.9	9.7	8.4	47.2		
	24.9	48.6	24.9	18.6	42.9	70.1	44.4	LI-1		0.15004
	7.1	26.8	7.1	20.3	20.3	CR = 14,1 %	CR = 0,4%	RI		0.37665
	CR = 11,7 %	CR = 55,8 %	CR = 7,9 %	CR = 30,8 %	CR = 0 %			TLI	Su15	0.04576
Su18	Group 1	Group 2:	Group 3:	Group 4	Group 5	Group 6	Group 7	RESULTS <td>OL</td> <td>0.99333</td>	OL	0.99333
	3.7	9.6	10.3	66.5	33	23.5	33.5	Pl, Cl, DL	OI	
	18.3	9.5	50.3	9	33	11.3	7.1	LI-1		0.40451
	17.5	53.8	16.1	24.5	34	65.2	59.5	RI		0.15357
	60.5	27.2	23.2	CR = 15,9 %	CR = 0 %	CR = 14,1 %	CR = 29,2%	TLI	Su18	0.06171
	CR = 7,5 %	CR = 3,9 %	CR = 4,3 %							
Su19	Group 1	Group 2:	Group 3:	Group 4	Group 5	Group 6	Group 7	RESULTS <td>OL</td> <td>0.78067</td>	OL	0.78067
	5.6	49.8	13.6	19.6	11.4	27.4	65.7	Pl, Cl, DL	OI	
	66.2	14.5	67.1	49.3	40.5	7.7	8.3	LI-1		0.18306
	4.9	10.1	12.3	31.1	48.1	64.9	26.1	RI		0.06909
	23.3	25.6	7	CR = 22,7 %	CR = 3 %	CR = 29,2 %	CR = 22,7%	TLI	Su19	0.00987
	CR = 27,6 %	CR = 11,4 %	CR = 5,3 %							

APPENDIX 4

Table 1.1.3 Consolidation 3

E5		CORNERSTONES			RESOURCES			OUTPUTS			RESULTS				
Group 1	Group 2	K, IM, IS, BT	Group 3	PC, PT, IT, OR	Group 4	Group 5	EF, SA, EE	Group 6	Group 7	PL, CL, DL	Group 7	Group 6	Group 7	PL, CL, DL	OI
15.5	38.1	1	11.7	11.7	48.1	10.5	29.3	64.4	46.7	55.6	46.7	8.5	6.7	7.6	0.88133
44.3	6.2	4	59.2	11.4	39.6	25.5	45.2	27.1	46.7	36.8	27.1	46.7	36.8	7.6	0.13414
10.8	12.8	1	12.8	5.4	40.5	49.9	45.2	27.1	46.7	36.8	27.1	46.7	36.8	7.6	0.06610
29.4	42.9	4	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	0.00781
CR = 73.7%		CR = 3.9%		CR = 8.2%		CR = 5.6%		CR = 0%		TLI		E5		0.00781	
E6		CORNERSTONES			RESOURCES			OUTPUTS			RESULTS				
Group 1	Group 2	K, IM, IS, BT	Group 3	PC, PT, IT, OR	Group 4	Group 5	EF, SA, EE	Group 6	Group 7	PL, CL, DL	Group 7	Group 6	Group 7	PL, CL, DL	OI
5.9	20.5	1	13.2	17.2	77.2	22.6	18.8	68.2	18.8	18.8	68.2	18.8	18.8	18.8	0.65933
40.4	7.6	4	41.8	5.3	10.1	10.1	8.1	4.8	8.1	8.1	4.8	8.1	4.8	8.1	0.46586
38.3	55	4	46.6	9.5	17.5	67.4	67.4	73.1	27.1	73.1	27.1	73.1	27.1	73.1	0.16587
15.4	16.9	1	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	0.16587
CR = 16.2%		CR = 7.8%		CR = 21.4%		CR = 9%		CR = 6.8%		TLI		E6		0.05089	
E9		CORNERSTONES			RESOURCES			OUTPUTS			RESULTS				
Group 1	Group 2	K, IM, IS, BT	Group 3	PC, PT, IT, OR	Group 4	Group 5	EF, SA, EE	Group 6	Group 7	PL, CL, DL	Group 7	Group 6	Group 7	PL, CL, DL	OI
25.8	43.7	4	35.1	35.1	12.6	11.7	12.2	19.2	57	38.1	19.2	17.4	9.7	13.6	0.24307
31	8	8	47.8	47.8	45.8	26.8	36.3	17.4	33.3	48.3	17.4	63.4	33.3	48.3	0.12988
14.5	8.8	8	8.3	8.3	41.6	61.4	51.5	63.4	33.3	48.3	17.4	63.4	33.3	48.3	0.12988
28.7	39.5	1	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	0.12988
CR = 53.4%		CR = 0.4%		CR = 2.3%		CR = 7.7%		CR = 1%		TLI		E9		0.02492	
E16		CORNERSTONES			RESOURCES			OUTPUTS			RESULTS				
Group 1	Group 2	K, IM, IS, BT	Group 3	PC, PT, IT, OR	Group 4	Group 5	EF, SA, EE	Group 6	Group 7	PL, CL, DL	Group 7	Group 6	Group 7	PL, CL, DL	OI
6.1	6.2	4	29.2	29.2	42.9	26	34.5	10.1	48.9	30	48.9	10.1	10.5	16.5	0.90167
38.9	13.6	4	46.5	46.5	42.9	41.3	42	22.6	10.5	16.5	10.5	22.6	10.5	16.5	0.33780
11.8	53.7	1	19.2	19.2	14.3	32.7	25.5	67.4	39.6	53.5	39.6	67.4	39.6	53.5	0.08025
43.2	26.5	1	34.8	5	5	5	5	5	5	5	5	5	5	5	0.08025
CR = 3.8%		CR = 16.3%		CR = 5.2%		CR = 5.6%		CR = 9%		TLI		E16		0.02444	
E25		CORNERSTONES			RESOURCES			OUTPUTS			RESULTS				
Group 1	Group 2	K, IM, IS, BT	Group 3	PC, PT, IT, OR	Group 4	Group 5	EF, SA, EE	Group 6	Group 7	PL, CL, DL	Group 7	Group 6	Group 7	PL, CL, DL	OI
21.5	9.2	1	15.3	42.5	42.5	62.2	38.7	38.7	15	15	38.7	15	16	15	0.83567
10.6	10.6	1	10.6	27	27	24.7	44.3	44.3	10.6	10.6	44.3	10.6	6.7	10.6	0.49390
18.9	35.5	4	27.2	14.4	14.4	13.1	16.9	74.4	77.3	74.4	16.9	74.4	77.3	74.4	0.31586
49	44.7	4	46.9	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	0.31586
CR = 4.3%		CR = 4.5%		CR = 1.7%		CR = 22.7%		CR = 12.4%		TLI		E25		0.13016	

APPENDIX 6: SPECIFIC INDEX TRAFFIC LIGHT VALUES IN THE BLACK AND WHITE PRINTED VERSION, THE GREEN COLOR IS SIGNIFIED WITH A CHECK MARK, YELLOW WITH AN EXCLAMATION MARK, AND RED WITH AN X MARK.

Direction of outputs

0–0.7 (✖)
0.7–0.85 (!)
0.85–1 (✓)

Cornerstones

0–0.8 (✖)
0.8–0.93 (!)
0.93–1 (✓)

Results

Dynamic leadership

0–0.5 (✖)
0.5–0.7 (!)
0.7–1 (✓)

Controlling and passive leadership

0–0.75 (✖)
0.75–0.85 (!)
0.85–1 (✓)

Resources

0–0.8 (✖)
0.8–0.93 (!)
0.93–1 (✓)

Measuring transformational leadership profiles – an empirical study across 21 nations in a multinational company

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ABSTRACT

The main purpose of this empirical research is to validate and verify the transformational leadership sand cone model, a decision-making model covering essential behaviours for transformational leaders, from resource allocations to the direction of outcomes. By using transformational leadership indexes and the Analytic Hierarchy Process-based questionnaire as well as a descriptive research approach, we measure the effectiveness of transformational leadership for 86 leaders located in 21 different geographical zones around the world. The results provide an effective measuring method and also a quantitative result that may provide the organisation a new insight into developing training programmes for global leaders. The model can be used as a direct guideline for leaders to follow and improve their transformational leadership skills. It can also be used for recruitment, selection or promotion purposes. Moreover, the model can be utilised as an aid in developing sustainable careers for global leaders.

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Transformational leadership effectiveness; transformational leadership sand cone model; leadership profile; leadership measurement; leadership index

Relevance to human factors/ergonomics theory

Global organisations need an agile adjustable learning leadership, this paper presents a decision making model which outlines the fundamental behaviours for transformational leaders. This empirical study also demonstrates an effective evaluation method to assess the capabilities of transformational leaders.

1. Introduction

In order to survive in a seemingly weak economic environment, multinational organisations need to grow and continually try out and adapt to new ideas. This is the reason why they need new transformational leaders (Chen, Li, and Tang 2009). Transformational leaders, as Burns (1978), Bass (1985, 1997, 1998), Bass and Avolio (1994), Bass and Riggio (2006) have defined them, are those who stimulate and inspire followers to explore existing as well as new horizons. In other words, transformational leaders provide a perfect fit for challenging organisations or complicated work groups, where followers really need an inspirational leader who can motivate

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and encourage them through a complex or uncertain situation and also make them feel empowered (Bass and Riggio 2006).

In recent years, many case studies have revealed a trend that 80% of the total sample of leaders demonstrate the transformational leadership style (Kazmi, Takala, and Naaranoja 2015). Surprisingly, in a real business environment, for example in a multinational company, the term transformational leadership still seems to be unknown to many middle-level leaders. This is even despite the fact that nowadays almost every profitable multinational company tries to invest in leadership training, and to make sure that all leaders have the right skills to take the company to the highest level of performance.

The purpose of this study is to examine and measure the effectiveness of transformational leaders, and to strengthen the value of a transformational leadership sand cone model.

Our main research question is: ‘To what extent do leaders in this multinational company display transformational leadership?’

Earlier studies have developed measurement methods focusing on describing the theories and techniques to show the correlation between different leadership styles and performance (Podsakoff et al. 1990; Nissinen 2001; Schaubroeck, Lam, and Cha 2007). From such a perspective, Takala et al. (2005, 2006a, 2008b) investigated the theoretical model developed by Bass (1985) to identify a model with five dimensions of transformational leadership. Takala et al. (2006a, 2008b) re-examined this theoretical model and introduced a conceptual sand cone model, which in turn can evaluate leadership behaviours from resource allocations to the direction of outcomes. This concept was studied and tested in a military environment in Finland from 2005 to 2008.

Despite the promising findings of this longitudinal research, further empirical research is still needed to verify and validate the earlier mentioned conceptual model in an environment other than the military. In a recent study, Ha-Vikström and Takala (2016) have developed and re-constructed the existing concept into a new analytical model for a transformational leadership profile, and also offered new equations of transformational leadership index, which provides a more descriptive assessment of the capabilities of transformational leaders. In that study, 26 experienced middle-level managers/leaders from four different business units in a global company participated. In spite of the noticeably results mentioned earlier, the sample size was still relatively small compared with the total number of leaders in the company. Therefore, this study addresses that concern by expanding the sample from 1 country to 21 countries, and by increasing the number of participants from 26 middle-level leaders to 86.

This empirical research offers a fresh perspective in systematic means for assessing the capabilities of transformational leaders. This simple evaluation concept can be utilised for recruitment, selection or promotion purposes. Finally, this new conceptual model can also be used as an aid in developing sustainable careers for global leaders.

The present study has utilised a descriptive research method, a questionnaire and three conceptual frameworks: (a) transformational leadership sand cone model, (b) Analytic Hierarchy Process (AHP) tool and (c) transformational leadership indexes. This paper is organised as follows: first, the conceptual frameworks are introduced; second, the method with data collection and measuring are described; third, the results are presented; and finally, discussion and conclusions are addressed.

2. Conceptual frameworks

The conceptual frameworks of this study are constructed and incorporated the AHP tool and the transformational leadership sand cone model, but the overall coherence concept builds on from our previous research.

2.1. AHP tool and Questionnaire

The first conceptual frame used in this study is the AHP, a multi-criteria assessment tool which is based on mathematics and psychological concepts through pair-wise comparisons. The AHP was innovated and developed by Saaty in 1970 and has been widely studied and developed since then. The evaluation among different factors helps us in making decisions in complex situations. The model has been used around the world in a wide variety of decision situations, in fields such as business, industry, healthcare, education and government (Saracoglu 2013). In this study, the Expert Choice software (which implements the AHP) was utilised for the calculation, where qualitative objects are converted to quantitative values (Saaty 1982).

The qualitative object is a questionnaire which consists of in total 30 pair-wise comparison statements that based on the AHP concept, and the ten dimensions of deep leadership of Nissinen (2006). Details of the questionnaire will be presented in Section 3.1

2.2. Transformational leadership sand cone model

The second conceptual frame used in this research is the transformational leadership model (Figure 1). It was developed and re-constructed based on the original sand cone model, which was invented by Takala et al. (2005, 2006a, 2006b; Takala, Kukkola, and Pennanen 2008a, 2008b). This transformational leadership model is supported by four main parts: resources, results, cornerstones and direction of outcomes. **Resources** are the basis that consists of processes (PC); people, technology, know how (PT); information systems (IT); and organisation groups and teams (OR). These four resources (PC, PT, IT, OR) are equally important; therefore the defined balance optimal value is 25% each (Takala, Kukkola, and Pennanen 2008a, 2008b).

Next, the following level is **Results** component, which includes three categories of leadership: passive, controlling and dynamic leadership in which passive and controlling leadership are least effective and concentrate more on corrective actions (Bass and Riggio 2006). In contrast to passive and controlling leadership, dynamic leadership plays a significant role; Progen (2013) defines dynamic leadership as a dual-focused form of adaptive leadership that allows a leader to react to changes by being proactive. Duffy (2006) explains dynamic leadership as leading with courage, passion and vision. In fact, as the world has become more complicated, dynamic times require dynamic, driven leaders (Williams 1998). Thus, the optimal value defined for dynamic leadership element is 82%, while for controlling and passive leadership is 9% each (Ha-Vikström, Takala 2016).

The third level is **Cornerstones** component, where the group of the *three T's* element and *building trust* element were formed: Intellectual stimulation (IS), Individualised consideration (IC), Inspirational motivation (IM) and Building trust and confidence (BT).

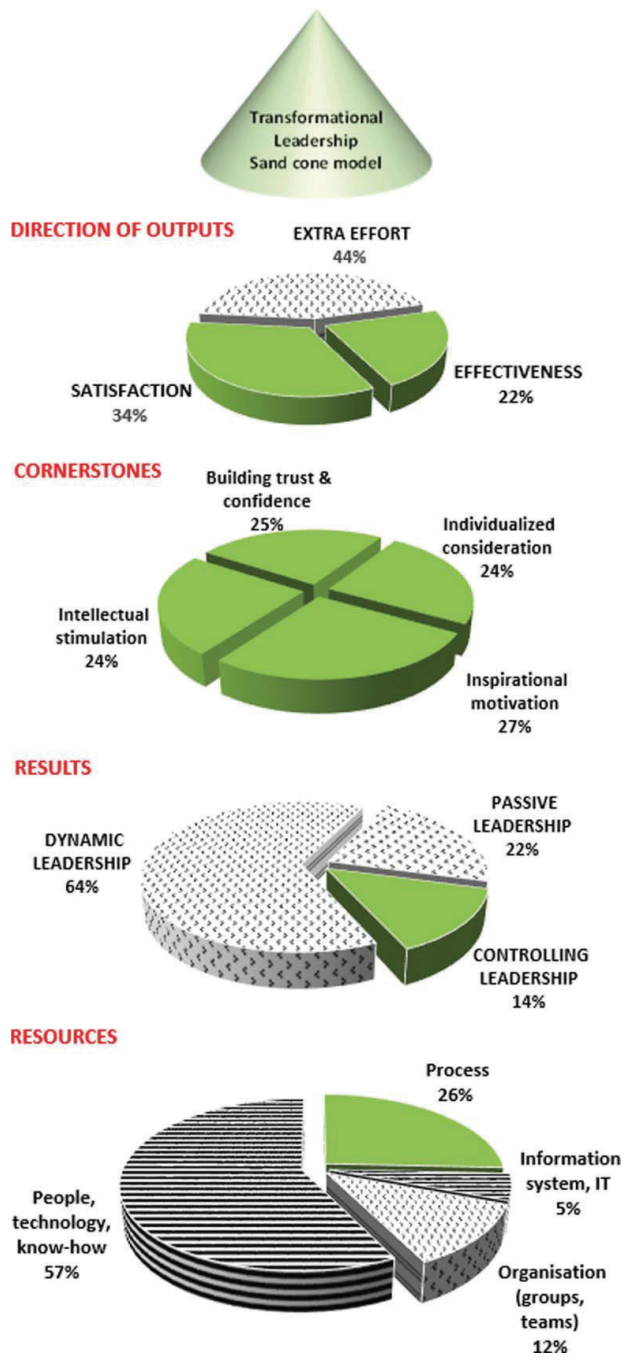


Figure 1. Transformational leadership sand cone model.
Source: Thanh Ha-Vikström and Takala (2016).

Jung and Avolio (1999); Kirkpatrick and Locke (1996); Bono and Judge (2003) describe these three 'I's as follows:

- Intellectual stimulation (IS): describes those transformational leaders who stimulate their followers' efforts to be innovative and creative. It refers to the leader's capacity to encourage his or her followers to think out of the box and generate new ideas.
- Individualised consideration (IC): describes those transformational leaders who pay special attention to each individual follower's needs for achievement and growth by acting as a coach or mentor, creating new learning opportunities helping followers to develop their own leadership potential.
- Inspirational motivation (IM): means leaders provide meaning and a vision for their followers' work by displaying enthusiasm. Motivate and set more challenging expectations and typically achieve higher performances.
- Building trust (BT), which originated from Idealised Influence constructed by Bass (1999) to describe transformational leaders, is a role model for their followers, encourage their followers by demonstrating care, showing respect, development of mutual trust and demanding equality. (Bass 1999; Bass and Riggio 2006; Bass and Steidlmeier 1999; Dirks and Ferrin 2002).
- Due to the equivalent importance of each element in this 'Cornerstones' component, the defined optimal value for each element is 25% (Takala, Kukkola, and Pennanen 2008a, 2008b).

Finally, the highest level of the model is the Direction of outputs component, which is divided into three types of performances: Effectiveness (EF), Satisfaction (SA) and Extra effort (EE); a main foundation of the 'Prospector, Analyser and Defender model' which was invented by Takala, Kukkola, and Pennanen (2008a). Extra effort EE, or Prospector (oriented for the future and extra effort); Effectiveness EF, or Defender (oriented for current results, less effort for future); Satisfaction SA, or Analyser (oriented between prospector and defender). In contrast with three previous components, the optimal value defined for 'directions of outputs' is 33.3% each, that is Effectiveness EF = Extra Effort EE = Satisfaction SA = 33.3%.

The values of variables mentioned earlier (given in the appendix section) are coloured by using a traffic light technique defined by Takala, Kukkola, and Pennanen (2008a, 2008b). The **green** colour stands for strength in the current variable, the **yellow** colour stands for possibility for development, and the **red** colour stands for focus in the development potential.

2.3. Transformational leadership indexes

The last conceptual frame utilised in this study is five new equations that have been developed and constructed based on our recent research. These formulas as follows:

Transformational leadership index (TLI)

$$TLI = 1 - \frac{\sum \text{ABS values}}{\sum \text{Optimal values}} \quad (1)$$

Note: ABS values = ABS (respondent behaviour's result – optimal value)

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Optimal value IC = IM = IS = BT = 25; PC = PT = IT = OR = 25
EF = SA = EE = 33.3; DL = 82, CL = PL = 9

$$\text{Specific index} = 1 - \left(\frac{\text{Absolute difference}}{\text{Maximal difference}} \right) \quad (2)$$

Note: Maximal difference EF = SA = EE = (100 - 33.3) = 66.7

Maximal difference IC = IM = IS = BT = (100 - 25) = 75

Maximal difference PL = CL = 91;

Maximal difference DL = 82

Maximal difference PC = PT = IT = OR = (100 - 25) = 75

Outcome index OI; Leadership index LI; Resource index RI equations:

$$\mathbf{OI} = \text{Mean (Specific index \{EF, SA, EE\})} \quad (3)$$

$$\mathbf{LI} = \text{Mean (Specific index \{IC, IM, IS, BT, PL, CL, DL\})} \quad (4)$$

$$\mathbf{RI} = \text{Mean (Specific index \{PC, PT, IT, OR\})} \quad (5)$$

Note: All acronyms mentioned in Equation (1)–(5) were explained in the previous transformational leadership sand cone model given in Section 2.2.

3. Method

This study is a cooperative venture between the University of Vaasa and the Learning and Development department of a multinational energy company. With respect to the requirement of the studied company, its name as well as the different business units will not be revealed. The participants are the middle-level managers/leaders in four different business units. This level of managers was chosen since they have the largest amount of subordinates/followers compared to higher levels. Regarding the research method, we utilise a descriptive research approach to answer our specific research question and also to describe the facts in an accurate way.

3.1. Questionnaire

The questionnaire we used in this study was designed as a web survey, which included two main parts, the first part contains 12 questions related to the participants' background; the second part consists of 30 pairwise comparison statements divided into seven groups. This second part was developed by Takala et al. in 2005 to 2008 and has been comprehensively improved since then and also at this time (a sample of the questionnaire can be found in the appendix). The goal of this AHP-based questionnaire is to get the best description of the leaders' behaviour.

A survey invitation email which included a web survey link was sent out to 138 mid-level managers/leaders at the same company but located in 21 different countries around the world (a list of these countries and locations can be found in the appendix). In the survey invitation email we assured that respondents' answers will be completely anonymous and in the questionnaire we have also emphasised that there are no right or wrong answers.

3.2. Data collection

All in all, 86 leaders filled in the questionnaire, which gives a response rate of 62% (86/138). The average completed time for the questions was 20 minutes.

- **Nationality region:** 35% of the participants were from Europe, 40% from Northern Europe and 25% from the Middle East and Asia.
- **Business unit:** this studied company consists of four business units A, B, C, D. 16% (14/86) of the participants were from unit A, 14% (12/86) from unit B, 16% (14/86) from unit C and 53% (46/86) from unit D.
- **Gender:** 80% of the participants were male (69 leaders), and 20% of participants were female (17 leaders).
- **Leaders/followers have the same nationalities:** 55% (47/86) of the participants have subordinates with the same nationality as themselves, and 45% (39/86) of the participant leaders have subordinates from other nationalities.
- **Education:** 6% (5/86) of respondents have a doctoral degree and 36% (31/86) have a Master's degree; 37% (32/86) have a Bachelor's degree; and 21% (18/86) have other degrees.
- **Experience:** 14% (12/86) of respondents have been working in this company for over 20 years, 44% (38/86) have under 20 years' experience, and the rest with less experience is 14% (12/86).
- **Number of followers:** 47% (41/86) of respondents have over 10 direct subordinates/followers, and the rest or 53% (45/86) have less than 10 direct followers.
- **Leaders' responsibilities recently changed** (survey question: Have your responsibilities recently (during this year) significantly changed? e.g. change of position or job description, working conditions or location etc.) The result of this question is: 30% (25/86) of respondents have recently or during this year had some significant responsibility changes (such as position, work conditions or location). This last factor was taken into account because it may have some impact on the leaders' decision-making behaviour which might reflect on the responses.

At the final stage of the AHP measurement, we calculated a Consistency Ratio (CR) in order to measure how consistent the judgments have been relative to large samples of purely random judgments (Saaty 1982). If the CR is higher than 0.3 the judgments are untrustworthy; therefore, in this case study only answers with CR of 0.3 or lower can be considered as reliable and can be analysed further.

3.3. Measures

The Expert Choice software package (which implements the AHP) was utilised in this study to calculate and obtain priorities for each transformational leadership behaviour. The first calculation was performed by applying the answers from all 86 respondents to the Expert Choice software ($86 \times 30 = 2580$ answers). From this first round of calculation the results were: 64 out of 86 respondents have trustworthy answers (74%), and 22 out of 86 respondents have one or more answers with CR higher than 0.3 (26%). Now, the number of respondents who have qualified answers is 64 (a collection of these usable answers can be found in the appendix). Then, the following calculation was performed by

exporting the data of $64 \times 30 = 1920$ answers into Microsoft Excel; in which data were analysed further by following the transformational leadership concept and the traffic light values (see appendix).

From this second round of calculation and analysis, 64 leadership profiles were created; an example can be seen in Figure 1. Finally, TL indexes for each leader were calculated by using five transformational leadership equations (Section 2.3) in Microsoft Excel. In the final step, each leader obtained not only a transformational leadership profile with traffic light colours, but also five different indexes: total leadership index, specific index, resource index, leadership index and outcomes index.

The average and median are two of the most common valid measures for central tendencies; however, in different situations, the mean/average is more appropriate to use than the median or vice versa (Statistics and Probability Dictionary 2016). In this study, the data-set is quite symmetric (the lowest index is 0.37 and the highest is 0.74); therefore, the mean or average is appropriate to use for this survey's statistics.

3.4. Validity and reliability

In order to verify the transformational leadership sand cone model, our measurement procedure has been designed to gain access to the construct validity, internal and external validity.

- In terms of **construct validity**, we made a control test for each equation (see appendix). In addition, the questionnaire also included 12 extra questions to reduce possible inconsistencies in the answers.
- For the **internal validity**, as mentioned earlier, we utilised the inconsistency ratio ICR (0.3) to disqualify all the inconsistent answers from the respondents.
- For the **external validity**, we utilised a semi-strong and weak market test. It was carried out by interviewing high-level managers in order to get a confirmation for either low or high data correlation acquired from our inter-correlations analysis. In this case study, we asked a Director and a General Manager who both work at the same studied company. The interview took place in a short meeting. Both interviewees supported the high negative correlation results (-0.66) between Effectiveness and Extra Effort factors.

Finally, we also learn from literature related to different types of leadership to verify and validate the transformational leadership sand cone model.

4. Results

Due to space constraints, only sample results for a few randomly chosen participants is presented in the below paragraphs.

Table 1 demonstrates a sample result of two participants; group 1 to group 7 indicate the results from the questionnaire. Resources, Results, Cornerstones and Outputs are the four components of the sand cone model. The traffic light colour visible in this table can be transferred to the transformational leadership sand cone model. All acronyms in this table such as IC, IM, IS, BT and so forth were explained in the previous section. CR = consistency ratio.

Table 2 demonstrates a sample result of five participants ID. This result shows the absolute/ABS difference value between the optimal value and the value obtained from the

Table 1. A sample result: a consolidation result for leadership profile.

S8	CORNERSTONES			RESOURCES			OUTPUTS			RESULTS			
	Group 1	Group 2	Group 3	IC, IM, IS, BT	PC, PT, IT, OR	Group 4	Group 5	Group 6	Group 7	EF, SA, EE	Group 6	Group 7	PL, CL, DL
9.6	11.5	11	10.5	10.5	10.5	10	12.6	41.6	24.7	11.3	41.6	24.7	41.6
55.1	5.6	30	52.7	52.7	52.7	43.3	41.6	12.6	13.1	42.5	12.6	13.1	12.6
8.8	40.8	25	20.7	20.7	20.7	46.6	45.8	45.8	62.2	46.2	45.8	62.2	45.8
26.5	42.2	34	16.1	16.1	16.1								
CR = 9,7%	CR = 9,5%		CR = 17,6%			CR = 0,6%	CR = 1%	CR = 1%	CR = 22,7 %		CR = 1%	CR = 22,7 %	
TLI													
S10	CORNERSTONES			RESOURCES			OUTPUTS			RESULTS			
	Group 1	Group 2	Group 3	IC, IM, IS, BT	PC, PT, IT, OR	Group 4	Group 5	Group 6	Group 7	EF, SA, EE	Group 6	Group 7	PL, CL, DL
6.4	27.8	17	13.3	13.3	7.7	11.7	11.7	23.5	45.8	10	23.5	45.8	45.8
27.1	8.4	18	24.6	24.6	46.2	26.8	26.8	11.3	6.3	36	11.3	6.3	6.3
21.4	44	32.7	7.5	7.5	46.2	61.4	61.4	65.2	47.9	54	65.2	47.9	47.9
45.1	19.9	32.5	54.7	54.7									
CR = 5,6%	CR = 7,6%		CR = 19,1%		CR = 0%	CR = 7,7%	CR = 14,1%	CR = 0,2 %					
TLI													

Note: in the black and white printed version, the traffic light colours in table 1 are changed, the green colour is signified with a check mark, yellow with an exclamation mark, and red with an x mark.

Table 2. A sample result: ABS difference value.

ABS Diff.	ABS Diff.	ABS Diff.	ABS Diff.	ABS Diff.	ABS Diff.	ABS Diff.	ABS Diff.	ABS Diff.	ABS Diff.	ABS Diff.	ABS Diff.	ABS Diff.	TOTAL of ABS Diff.
IM	IS	BT	PC	PT	IT	OR	EF	SA	EE	PL	CL	DL	
3.2	4.2	2.1	2.1	5.9	13	16.8	14.1	11.4	25.6	26.2	3.4	29.6	167.3
7.3	13.8	10.8	29.9	1.7	19.3	12.3	20.7	8.3	29.1	33.7	1	34.7	239.9
1.2	18.4	18.4	10.5	30.8	1	19.3	6.1	6.1	12.1	38.1	3.1	34.9	222.7
3.3	16.5	0.3	14.8	13	15.8	14	31.7	16.3	15.3	8.4	10.2	18.6	191.2
0.7	22.8	9	4.1	16.1	19.2	0.9	16.6	22.8	6.3	44.9	0.4	44.6	222.9

Table 3. A sample result: specific index.

ID	Specific IC	Specific IM	Specific IS	Specific BT	Specific PC	Specific PT	Specific IT	Specific OR	Specific EF	Specific SA	Specific EE	Specific PL	Specific CL	Specific DL
1	0.87	0.96	0.94	0.97	0.97	0.92	0.83	0.78	0.79	0.83	0.62	0.71	0.96	0.64
2	0.77	0.90	0.82	0.86	0.60	0.98	0.74	0.84	0.69	0.88	0.56	0.63	0.99	0.58
3	0.84	0.84	0.75	0.75	0.86	0.59	0.99	0.74	0.91	0.91	0.82	0.58	0.97	0.57
4	0.83	0.96	0.78	1.00	0.80	0.83	0.79	0.81	0.53	0.76	0.77	0.91	0.89	0.77
5	0.81	0.99	0.70	0.88	0.95	0.79	0.74	0.99	0.75	0.66	0.91	0.51	1.00	0.46

answers. The last column is the sum of the ABS difference values of 14 factors. Theoretically, the highest absolute difference value can be equal to 400 (4×100 for each component). For this result, the lower ABS difference value, the better the TL index. In other words, the closer the optimal value, the smaller the ABS difference value.

Table 3 demonstrates a sample result of five participants ID. This result shows the specific index for each factor using Equation (2) (see Section 2.3).

Table 4 demonstrates a sample result of the total of the absolute difference values and transformational leadership index. The higher the index, the better the performance. The scale for transformational leadership index is 0 to 1. 0 is the worst and 1 is the best.

Table 5 demonstrates a sample result of three indexes: outcomes index, leadership index and resource index. The scale for these three indexes ranges from 0 to 1. 0 is the worst and 1 is the best. However, do note that the indexes in Table 5 are not comparable to the TL index in Table 4 and specific index in Table 3 due to different normalisation formulas.

Figure 2 presents a consolidation of the transformational leadership index based on 64 usable responses. Every dot in the graph represents the transformational leadership index for one participant. The highest TL index of this group ($n = 64$) is 0.74, and the lowest is 0.37. As a result, the mean transformational leadership index for all participants is 0.53. The circle in the graph (Figure 2) indicates the mean index for all participants.

Table 6 presents descriptive statistics and inter-correlations between the outcome index, leadership index, resource index and transformational leadership index. Observably, the correlation between three indexes (OI, LI, RI) and the TL index are high (0.4; 0.6; 0.6); and this could justify the validity of the new equations.

Table 4. A sample result: ABS transformational leadership index.

Part. ID	Total of ABS diff.	TL index
1	167.3	0.58
2	239.9	0.4
3	222.7	0.44
4	191.2	0.52
5	222.9	0.44

Table 5. A sample result: outcomes index, leadership index and resource index.

Part. ID	OI	LI	RI
1	0.74	0.87	0.87
2	0.71	0.79	0.79
3	0.88	0.76	0.79
4	0.68	0.88	0.81
5	0.77	0.76	0.87

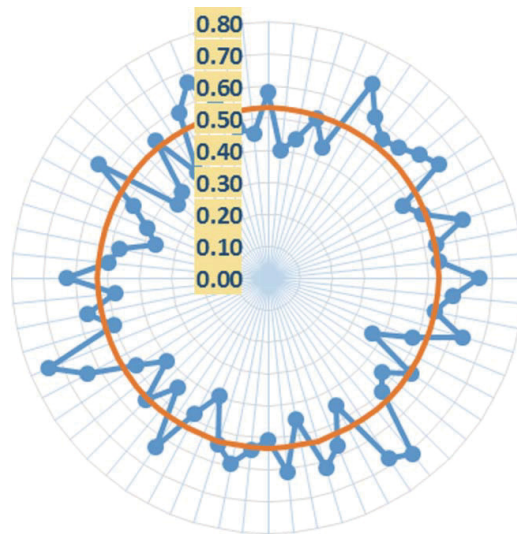


Figure 2. Total transformational leadership index.

Table 7 presents the data analysis and inter-correlations between 14 factors and transformational leadership index. The correlation coefficients can vary numerically between 0.0 and 1.0. The closer the correlation is to 1.0, the stronger the relationship between the two variables. In this table, there are several correlation coefficients that indicate the existence of a medium to strong relationship, for example: a) between effectiveness EF variable and extra effort EE variable (-0.66); b) between extra effort EE and satisfaction SA (-0.52); c) between dynamic leadership DL and passive leadership PL (-0.85); d) between controlling CL and passive leadership PL is (-0.50).

5. Discussion

5.1. Discussion

This study strengthens the empirical evidence that leadership behaviour can be effectively visualised in a holistic way by using the transformational leadership sand cone model. The analytical model is definitely simple to use, with respect to the AHP-based questionnaire which is quite straightforward for the leader to answer. The common traffic light defined in the model could help leaders easily recognise on what and where they should focus in order to get maximal results of the outcomes. The colourful profile is a clear

Table 6. Descriptive statistics and indexes inter-correlations.

	Variables	Mean	SD	Min	Max	1	2	3
1	TL index	0.53	0.09	0.37	0.74	1		
2	Outcome index, OI	0.82	0.09	0.62	1	0.4	1	
3	Leadership index, LI	0.82	0.05	0.72	0.9	0.67	-0.2	1
4	Resource index, RI	0.84	0.07	0.72	1	0.62	0.17	0.04

NOTE: The correlation coefficients between TL index and Outcome index is 0.40. The correlation coefficients between TL index and Leadership index is 0.67. The correlation coefficients between TL index and Resource index is 0.62. These high scores indicate the presence of a strong relationship between 4 indexes.

Table 7. Data analysis and inter-correlations.

	IC	IM	IS	BT	PC	PT	IT	OR	EF	SA	EE	PL	CL	DL	TLI
Diff. IC	1.00														
Diff. IM	-0.40	1.00													
Diff. IS	-0.45	-0.05	1.00												
Diff. BT	-0.04	-0.54	-0.50	1.00											
Diff. PC	-0.03	-0.22	0.04	0.19	1.00										
Diff. PT	0.12	0.10	-0.23	0.02	-0.42	1.00									
Diff. IT	-0.13	0.12	0.06	-0.06	-0.38	-0.38	1.00								
Diff. OR	0.04	-0.04	0.20	-0.18	-0.10	-0.48	-0.19	1.00							
Diff. EF	-0.24	-0.02	0.21	0.03	0.03	-0.12	0.21	-0.11	1.00						
Diff. SA	0.12	-0.23	-0.16	0.26	-0.06	0.09	0.01	-0.07	-0.30	1.00					
Diff. EE	0.12	0.20	-0.06	-0.23	0.02	0.04	-0.19	0.16	-0.66	-0.52	1.00				
Diff. PL	0.20	-0.14	0.00	-0.04	0.12	-0.03	-0.12	0.03	0.07	0.04	-0.09	1.00			
Diff. CL	-0.05	0.03	0.06	-0.04	-0.13	-0.21	0.21	0.18	-0.07	0.04	0.03	-0.50	1.00		
Diff. DL	-0.20	0.14	-0.04	0.07	-0.07	0.15	0.01	-0.14	-0.03	-0.07	0.08	-0.85	-0.02	1.00	
TL index	-0.16	-0.09	0.10	0.12	0.03	-0.43	0.28	0.24	0.08	0.27	-0.29	-0.48	0.26	0.40	1.00

guideline for leaders to follow and improve their leadership behaviours as well as their decision-making.

With respect to the research question:

‘To what extent do leaders in this multinational company display transformational leadership?’

The results obtained from the total of the TL index presented in [Figure 2](#), which shows an average index of 0.53. By using a word rating scale: Excellent ≥ 0.8 , Good ≥ 0.6 , Average ≥ 0.5 , Poor ≥ 0.3 , Very poor ≥ 0 , we can conclude that 0.53 is the average. This result conveys a clear message to help the organisation in having better understanding of their current transformational leadership effectiveness.

In this study, we focused on the transformational leadership sand cone model, which contains four components with 14 performance factors. That is, first, the *Resources* component consists of four factors; second, the *Results* component consists of three factors; third, the *Cornerstones* component consists of four factors and finally, the *Direction of outcomes* component consists of three factors. Each performance factor was defined with an optimal value (see [Section 2.2](#)); if the answers of the respondents are closer or equal to the optimal values, then the calculated TL index will be good (1 is the best index). The better the performance, the higher the index. The performance result will reflect on the leadership profile; in other words, a good performance will give a green leadership profile. In contrast, if the answers are far away from the optimal values, then the TL index will be low; consequently the leadership profile will be shown as red. Furthermore, as the inter-correlation values within the 14 behaviour factors were high, from 0.40 to 0.85 ([Table 7](#)), this gives a strong indication of a trustworthy model.

5.2. Implications

This research delivers three practical implications:

Implication 1, our results offer a simple but effective measuring method to create a clear leadership profile with traffic light colours, the colour and the weight for each behaviour in the profile provide a visual guideline, which leaders easily can follow to increase their own self-awareness and improve their leadership skills. Admittedly, this concept can be utilised for any respondents who are able to answer the questionnaire consistently, he/she does not need to be a leader, he/she can be a university student, a teacher, an officer, a nurse or any other occupation.

Implication 2, the indexes obtained through the results from *Implication 1* above, can be utilised by management or Human Resources for recruitment or promotion purposes.

Implication 3, the three groups of people in the model (Prospectors, Analysers and Defenders) provide a foundation for further research in developing sustainable careers for global leaders.

5.3. Limitations and further research

In spite of the size and diversity of the studied company, our investigation still has limitations that must be addressed in order to open a reference point for further studies. First, this study examines and measures the effectiveness of global mid-level transformational leaders, although it is clear that leadership behaviours can be visualised and measured by using the sand cone model; however, what is less clear is how factors such as cultures,

genders, education, working experience or financial situation of the company influence the effectiveness of transformational leaders. Therefore, further research should focus on this perspective in order to get better understanding of the fundamental changes in people management practices. The second limitation of this research is related to the descriptive statistics results, although the correlation between transformational leadership index and three other indexes (OI, LI, RI) was high (0.4; 0.7; 0.6), the correlation between LI and RI was not as strong as expected (0.04). Thus, further longitudinal studies are needed as we continue to expand this model deeply into the sustainable career research area.

6. Conclusions

This is one of the first large-scale studies to empirically test the analytical transformational leadership sand cone model in a multinational business environment. This study's uniqueness is the large sample of participants from 21 different geographical zones around the world. The research provides not only an effective measuring method, but also offers a quantitative result to the company. This finding may convey to the organisation a new insight into developing training programmes to support the leaders in improving their transformational leadership behaviours from national to global levels. Furthermore, this simple evaluation concept can be utilised for recruitment, selection or promotion purposes for any company. We expect these new findings to significantly increase the use of this transformational leadership sand cone model, because this new model, beyond the benefits mentioned earlier, can also be used as an aid in developing sustainable careers for global leaders, or as a recipe for leadership success.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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Prof. Dr Josu Takala has a vast experience in both industry and academia. He worked for ABB (Strömberg), and belongs to ABB (Asea Brown Boveri) Group. ABB Strömberg consists of about 30 independent limited companies in the wide business area of electronics and technologies. R&D is 8% of the turnover (3000 million USD/1995) in the divisions of R&D, quality-assurance-related tasks to automation as researcher and manager in 1979–1992. He has received his MSc degree in electrical engineering from Tampere University of Technology in 1980 and Dr.Tech. degree in electrical engineering and business studies in the University of Vaasa in 1988, as well as Dr.HC degree from the Technical University of Košice in 2009. Also, he has received his Dr.HC degree in technology management and business in Universiti Tun Hussein Onn Malaysia in 2015. Currently, he is a professor in Industrial Management at the University of Vaasa, Finland, from 1988 onwards,

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References

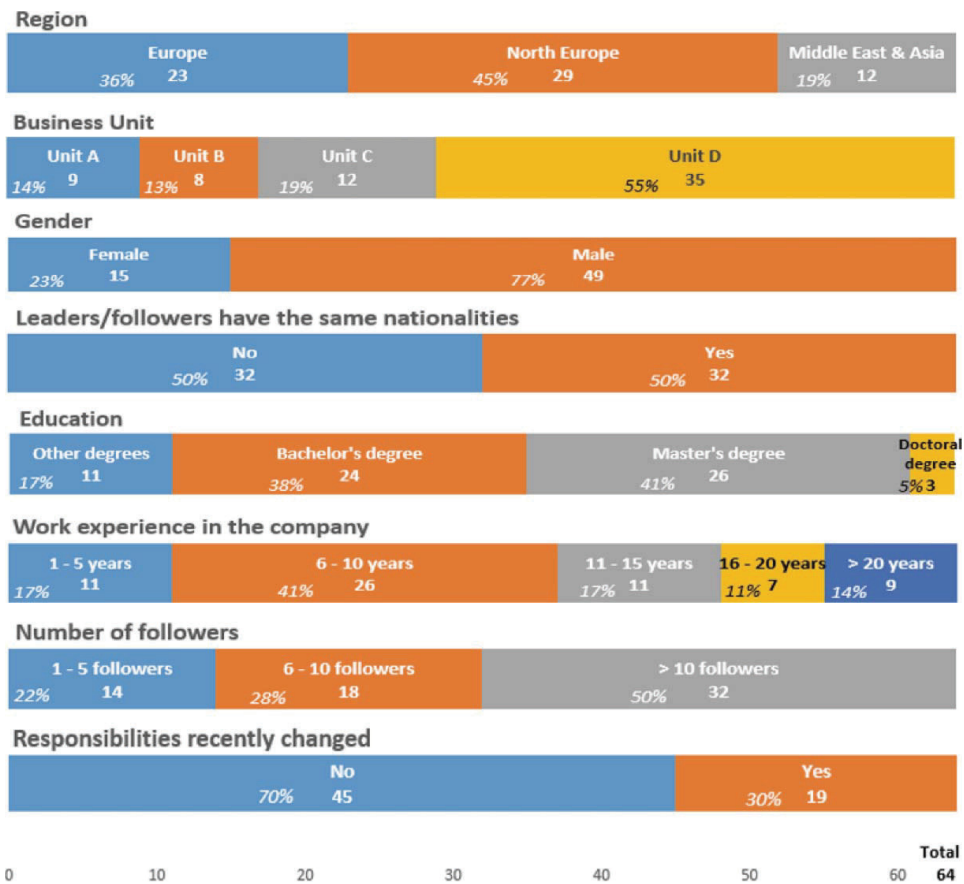
- Bass, B. 1985. *Leadership and Performance Beyond Expectations*. New York: Free Press.
- Bass, B. 1997. "Does the Transactional-Transformational Leadership Paradigm Transcend Organizational and National Boundaries?" *American Psychologist* 52: 130–139.
- Bass, B. 1998. *Transformational Leadership: Industrial, Military, and Educational Impact*. Mahwah, NJ: Erlbaum.
- Bass, B. 1999. "Two Decades of Research and Development in Transformational Leadership." *European Journal of Work and Organizational Psychology* 8 (1): 9–32.
- Bass, B., and B. Avolio, eds. 1994. *Improving Organizational Effectiveness Through Transformational Leadership*. Thousand Oaks, CA: Sage.
- Bass, B., and R. Riggio. 2006. *Transformational Leadership*. 2nd ed. Mahwah, NJ: Lawrence Erlbaum Associates.
- Bass, B., and P. Steidlmeier. 1999. "Ethics, Character, and Authentic Transformational Leadership Behaviour." *Leadership Quarterly* 10 (2): 181–217.
- Bono, J., and T. Judge. 2003. "Self-Concordance at Work: Toward Understanding The Motivational Effects of Transformational Leaders." *Academy of Management Journal* 46: 554–571.
- Burns, J. 1978. *Leadership*. New York: Harper and Row.
- Chen, C., H. Li, and Y. Tang. 2009. "Transformational Leadership and Creativity: Exploring the Mediating Effects of Creative Thinking and Intrinsic Motivation." *International Journal of Management and Enterprise Development* 6 (2): 198–211.
- Dirks, K., and D. Ferrin. 2002. "Trust in Leadership: Meta-Analytic Findings and Implications for Research and Practice." *Journal of Applied Psychology* 87 (4): 611–628.
- Duffy, F. 2006. *Power, Politics, and Ethics in School Districts: Dynamic Leadership for Systemic Change, Leading Systemic School Improvement*. Lanham, MD: Rowman & Littlefield Publishing Group. ISBN-13: 978-1578863181.
- Ha-Vikström, T., and J. Takala. 2016. "Knowledge Management and Analytical Modelling for Transformational Leadership Profiles in a Multinational Company." Chap. 11 in *Successes and Failures of Knowledge Management*, edited by Jay Liebowitz, 151–174. Cambridge: Morgan Kaufmann/Elsevier. ISBN: 978-0-12-805187-0.
- Jung, D., and B. Avolio. 1999. "Effects of Leadership Style and Followers' Cultural Orientation on Performance in Group and Individual Task Conditions." *Academy of Management Journal* 42: 208–218.
- Kazmi, S., J. Takala, and M. Naaranoja. 2015. "Sustainable Solution for Competitive Team Information." *Journal of Global Strategic Management* 9 (1): 5–16
- Kirkpatrick, S. and E. Locke. 1996. "Direct and Indirect Effects of Three Core Charismatic Leadership Components on Performance and Attitudes." *Journal of Applied Psychology*. 81: 36–51
- Nissinen, V. 2001. "Military Leadership: A Critical Constructivist Approach for Conceptualizing, Modelling and Measuring Military Leadership in the Finnish Defence Forces." PhD diss., National Defence University, Helsinki.
- Nissinen, V. 2006. *Deep Leadership*. 2nd ed. Hämeenlinna: Talentum Oy.
- Podsakoff, P., S. MacKenzie, R. Morrman, and R. Fetter. 1990. "Transformational Leader Behaviors and Their Effects on Follower's Trust in Leader Satisfaction, and Organizational Citizenship Behaviors." *Leadership Quarterly* 1: 107–142.

- Progen, M. 2013. "Dynamic Leadership." Leadership Writing Contest entry. MarineCorps Association and Foundation. Accessed March 2016. <https://www.mca-marines.org/gazette/dynamic-leadership>
- Saaty, T.L. 1982. *Decision Making for Leaders. The Analytical Hierarchy Process for Decisions in a Complex World*. Belmont, CA: Wadsworth. Latest ed. revised 2000. Pittsburgh, PA: RWS Publications.
- Saracoglu, B. 2013. "Selecting industrial investment locations in master plans of countries." *European Journal of Industrial Engineering* 7 (4): 416–441.
- Schaubroeck, J., S. Lam, and S. Cha. 2007. "Embracing Transformational Leadership: Team Values and the Impact of Leader Behavior on Team Performance." *Journal of Applied Psychology* 92: 1020–1030.
- Statistics and Probability Dictionary. 2016. Accessed February 20. <http://stattrek.com/statistics/dictionary.aspx?definition=statistics>
- Takala, J., H. Hirvelä, P. Hiippala, and V. Nissinen. 2005. "Management and Deep Leadership Sand Cone model for Human Resource Allocation, The First Phase of the Study." Paper presented at the Fourth International Automation and Manufacturing Conference, ATDC (Advanced Technologies for Developing Countries), Slavonski Brod, Croatia, September 21–24.
- Takala, J., H. Hirvelä, P. Hiippala, and V. Nissinen. 2006a. "Management and Deep Leadership Sand Cone Model for Human Resource Allocation, The Second Phase of the Study." Paper presented at the Eleventh International Conference on Productivity and Quality Research, ICPQR. December 12–15. New Delhi, India. International Conference on Multinational Enterprises—Multinational Enterprise in the Global Economy, March 14–16, 2006, Taipei, Taiwan.
- Takala, J., J. Leskinen, H. Sivusuo, J. Hirvelä, and T. Kekäle. 2006b. "The Sand Cone Model: Illustrating Multi-Focused Strategies." *Management Decision* 44 (3): 335–345.
- Takala, J., A. Kukkola, and J. Pennanen. 2008a. "Prospector, Analyzer and Defender Models in Directions of Outcome in Transformational Leadership." Paper presented at the 17th International Conference on the Israel Society for Quality, ISAS 2008. November 18–20. Jerusalem, Israel. The 10th Management International Conference, MIC 2009, November 25–28, 2009, Sousse, Tunis.
- Takala, J., J. Pennanen, P. Hiippala, A. Maunuksela, and O. Kilpiö. 2008b "Decision Maker's Outcome as a Function of Transformational Leadership." In *Simplify Leadership and Coaching Effectiveness*, edited by T. Kinnunen, 67–86. Lahti: Deep Lead Oy, Aldus Oy.
- Williams, L. 1998. *Servants of the People: The 1960s Legacy of African-American Leadership*. New York: St Martin's Press.

Appendix 1. Participants' locations and nationalities

No.	Participants' locations	n
1	Cameroon	1
2	China	6
3	Denmark	2
4	Estonia	1
5	Finland	25
6	France	3
7	Germany	8
8	GREECE	3
9	India	7
10	Italy	4
11	Netherlands	2
12	Norway	2
13	Pakistan	1
14	Poland	3
15	Saudi Arabia	1
16	Sweden	3
17	Taiwan	1
18	Turkey	2
19	United Arab Emirates	4
20	United Kingdom	6
21	United States	1
	Total	86

No.	Participants' nationalities	n
1	British	5
2	Cameroonian	1
3	Chinese	7
4	Danish	2
5	Dutch	3
6	Estonian	1
7	Finnish	25
8	French	3
9	German	8
10	GREEK	3
11	Indian	11
12	Italian	4
13	Norwegian	2
14	Pakistan	1
15	Polish	4
16	Swedish	4
17	Turkish	2
	Total	86

Appendix 2. Collection of usable data from the survey

Note: This figure represents the collection of **usable data** in eight categories. The number display under each group (e.g. 23 in group Europe) is the total participants in group Europe, and the percentage in *Italic*, for example 36% is the percentage of respondents in group Europe (23/64). 64 is the total number of the usable responses.

Appendix 3: Transformational leadership sand cone traffic light values

Directions of outputs/optimal 33%

- 50–100 (red)
- 40–50 (yellow)
- 20–40 (green)
- 10–20 (yellow)
- 0–10 (red)

Cornerstones/optimal 25%

- 40–100 (red)
- 30–40 (yellow)
- 20–30 (green)
- 10–20 (yellow)
- 0–10 (red)

Appendix 5: A sample of an equation control test

	1	2
TOTAL of ABS diff.	1	
TL index	-1	1

Note: Total of ABS diff = Total of absolute difference.
TL index = Transformational leadership index.

FROM THE FORTHCOMING SPECIAL ISSUE: CO-EVOLUTION ON HUMAN FACTORS,
BUSINESS MANAGEMENT AND SOCIETY

Do cultures, genders, education, working experience or financial status influence the effectiveness of transformational leaders?

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ABSTRACT

The main purpose of this study is to investigate how factors such as cultures, genders, education, working experience or financial situation of the company influence the effectiveness of transformational leaders. By using transformational leadership (TL) sand cone model, together with an analytic hierarchy process-based questionnaire and TL indexes as well as a descriptive research approach, we measure the TL effectiveness for 86 middle managers located in 21 countries at the same company. We find that highly educated leaders, female leaders or leaders in a business unit with stable financial status were more effective (higher TL index) than the leaders in the opposite counterparts. Surprisingly, senior leaders and leaders of multicultural teams seem to be less effective (lower TL index) than fresh leaders who recently (within 1–5 years) joined the company. The implications of the findings for both theory and practice as well as directions for further studies are also discussed.

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KEYWORDS

Transformational leadership effectiveness; transformational leadership sand cone model; transformational leadership measurement; transformational leadership behaviours; transformational leadership index

Relevance to human factors/ergonomics theory

This empirical research highlights a decision-making model which outlines the fundamental behaviours for transformational leaders. This study also offers a fresh perspective of how cultures, genders, education as well as several other human factors would have an impact on the effectiveness of transformational leaders.

1. Introduction

Throughout the past two decades, transformational leadership is one of the most frequently supported leadership theories (Avolio, Walumbwa, and Weber 2009; Sosik and Jung 2010; Li, Zhao, and Begley 2015; Bai, Lin, and Li 2016; Wang, Kim, and Lee 2016; Banks et al. 2016). Although scholars have already examined relations between transformational leadership and personality (Judge and Bono 2000; Hautala 2005), some studies have maintained a focus on transformational leadership behaviours and attitudes analysis (e.g. Podsakoff et al. 1990; Podsakoff, MacKenzie, and Bommer 1996; Lehmann-

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Willenbrock et al. 2015; Jin, Seo, and Shapiro 2016), other studies have focused on measuring the effectiveness of transformational leaders by using transformational leadership sand cone model (e.g. Nissinen 2006; Takala et al. 2005; Takala, Hirvelä et al. 2006; Takala, Leskinen, et al 2006; Takala, Kukkola, and Pennanen 2008; Takala et al. 2008; Kazmi, Naaranoja, and Takala 2013; Ha-Vikström and Takala 2016). However, what is less clear is how factors such as cultures, genders, education, working experience or financial situation of the company influence the effectiveness of transformational leaders. In order to fill in that gap, this study attempts to assess the influences of these above-mentioned factors on transformational leadership, and focus on a main research question:

Do nationality diversity, genders, education, working experience as well as the financial status of the business unit influence the effectiveness of transformational leaders?

We address our research question by using a dataset of 86 middle level managers from 17 different nationalities, who are working at a same multinational company, but located in 21 different geographical zones around the world.

The empirical study offers a fresh perspective to the theory of how nationality diversity, genders, education and working experience as well as financial status would have an impact on the effectiveness of transformational leaders. This theory may convey to global organisations new ideas for leadership training program to support their leaders to reach their ultimate career. In addition, this simple assessing method can be used for recruitment selection or promotion purposes. Finally, this new conceptual model can also be used as an aid in developing sustainable careers for global leaders.

This paper is structured as follows. Section 2 describes the conceptual frameworks. Section 3 explains the method with data collection and measuring. Section 4 introduces the results analysis. Finally, Sections 5 and 6 present our discussion and conclusions.

2. Conceptual frameworks

In line with the overall coherence concepts based on the previous research of Ha-Vikström and Takala (2016), the conceptual frameworks we use in this study included (1) analytic hierarchy process (AHP) and an AHP-based questionnaire; (2) transformational leadership sand cone model and transformational leadership indexes (TLI).

2.1. Analytic hierarchy process (AHP) tool and questionnaire

Analytic hierarchy process is a multiple criteria evaluation tool based on mathematics and psychological concept through pairwise comparison. Developed by Thomas Saaty since 1970, AHP provides a proven, effective means to deal with complex decision-making and can assist in identifying and weighing criteria, analysing the data collected and expediting the decision-making process. In other words, AHP helps the decision-maker to set priorities in complex situations by synthesising the results. Nowadays, AHP is used around the world in a wide variety of decision situations, in fields such as government, business, industry, healthcare, shipbuilding and education (Saracoglu 2013).

We utilise the AHP-based questionnaire because AHP helps to capture both subjective and objective evaluation measures by respondents. The AHP concept could provide a technique to check the consistency of the respondents' evaluation; consequently it reduces the biases that respondents may have in their decision-making process. More details about the contents of the questionnaire will be presented in the method section.

2.2. Transformational leadership sand cone model

The transformational leadership sand cone model was developed and re-constructed based on the original conceptual sand cone model to evaluate the transformational leadership performance that was invented and improved by Takala et al. (2005), Takala, Hirvelä, et al. (2006), Takala, Leskinen, et al. (2006), Takala, Kukkola, and Pennanen (2008) and Takala et al. (2008). The structure of this model supported by four main components that is called RRCD (Resources, Results, Cornerstones and Directions of outputs).

- *Resources* are the foundation which is formed by four equally important elements: processes (PC) 25%; people, technology and know-how (PT) 25%; information systems (IT) 25% and organisation groups and teams (OR) 25%.
- *Results* include three styles of leadership: passive, controlling and dynamic leadership in which passive and controlling leadership concentrate more on corrective actions and least effective (Bass and Riggio 2006). While dynamic leadership plays a crucial role, the world has become more complicated, dynamic times require dynamic, driven leaders (Williams 1998) who can lead with courage, with passion and vision (Duffy 2006) and can also react to changes by being proactive. Therefore, the optimal value defined for dynamic leadership element is 82%, while the optimal value for controlling and passive leadership is 9% each (Ha-Vikström and Takala 2016)
- *Cornerstones* contain a group of three 'I' factor and building trust factor. That is, Intellectual stimulation (IS), Individualised consideration (IC), Inspirational motivation (IM) and Building trust and confidence (BT). Jung and Avolio (1999), Kirkpatrick and Locke (1996) and Bono and Judge (2003) have described these four factors as follows:
 - *Intellectual stimulation* (IS) refers to leaders' capacity to encourage his or her followers to think out of the box, to be innovative and creative and generate new ideas.
 - *Individualised consideration* (IC) refers to leaders' ability to pay special attention to each individual follower's needs for achievement and growth; to act as a coach or mentor and create new learning opportunities helping followers to develop their own leadership potential.
 - *Inspirational motivation* (IM) describes those leaders who can provide a clear vision for their followers' work by displaying enthusiasm. Inspirational motivation (IM) describes leaders who motivate and provide a clear vision, encourage and set high standards for followers for future goals.
 - *Building trust* (BT) originated from *Idealised influence* which is constructed by Bass (1999) to describe a leader, a role model for their followers, showing respect by demonstrating care, development of mutual trust and demanding equality (e.g. Bass 1999; Bass and Steidlmeier 1999; Dirks and Ferrin 2002; Bass and Riggio 2006).

Due to the equivalent importance of each element in this *Cornerstones* component explained above, the defined optimal value for each element is 25% (Takala, Kukkola, and Pennanen 2008; Takala et al. 2008). Finally, the top level of the transformational leadership sand cone model is as follows:

Direction of outputs includes three types of performances: Effectiveness (EF), Satisfaction (SA) and Extra effort (EE). These are also the main foundation of the 'Prospector, Analyser and Defender' model, which was innovated by Takala, Kukkola, and Pennanen (2008). Extra effort EE, or Prospector – oriented to the future and extra effort.

Effectiveness EF, or Defender – oriented for current results, less effort for the future. Satisfaction SA, or Analyser – oriented between prospector and defender. Based on the equivalent importance of these three performances, the defined optimal balance for each element in this *direction of outputs* component is: Effectiveness EF = Extra Effort EE = Satisfaction SA = 33.3% (Takala, Kukkola, and Pennanen 2008; Takala et al. 2008).

Figure 1 is an example of the transformational leadership sand cone model. This colourful model is defined by a list of traffic light values, which can be found in Appendix 3. *Green* stands for strength in the current variable, *yellow* stands for possibility for development and *red* stands for focus in the development potential. In the black and white printed version, the green colour is signified with blank, yellow with dots and red with horizontal lines.

2.3. Transformational leadership indexes

Five formulas of TLI used in this study are: specific index, outcomes index, leadership index and resource index (Ha-Vikström and Takala 2016)

Transformational leadership index (TLI)

$$TLI = 1 - \frac{\sum \text{ABS values}}{\sum \text{Optimal values}} \quad (1)$$

Note: ABS values = ABS (respondent behaviour's result – optimal value)

Optimal value IC = IM = IS = BT = 25; PC = PT = IT = OR = 25

EF = SA = EE = 33.3; DL = 82, CL = PL = 9

$$\text{Specific index} = 1 - \left(\frac{\text{Absolute difference}}{\text{Maximal difference}} \right) \quad (2)$$

Note: Maximal difference EF = SA = EE = (100 – 33.3) = 66.7

Maximal difference IC = IM = IS = BT = (100 – 25) = 75

Maximal difference PL = CL = 91;

Maximal difference DL = 82

Maximal difference PC = PT = IT = OR = (100 – 25) = 75

Outcome index OI; leadership index LI; resource index RI equations:

$$OI = \text{Mean (Sspecific index \{EF, SA, EE\})} \quad (3)$$

$$LI = \text{Mean (Sspecific index \{IC, IM, IS, BT, PL, CL, DL\})} \quad (4)$$

$$RI = \text{Mean (Sspecific index \{PC, PT, IT, OR\})} \quad (5)$$

Note: All acronyms mentioned in Equations (1)–(5) were explained in the previous transformational leadership sand cone model in Section 2.2.

3. Method

In order to describe the facts of our specific research questions in an accurate way, we use a descriptive research approach. Participants in this study are the middle level managers/

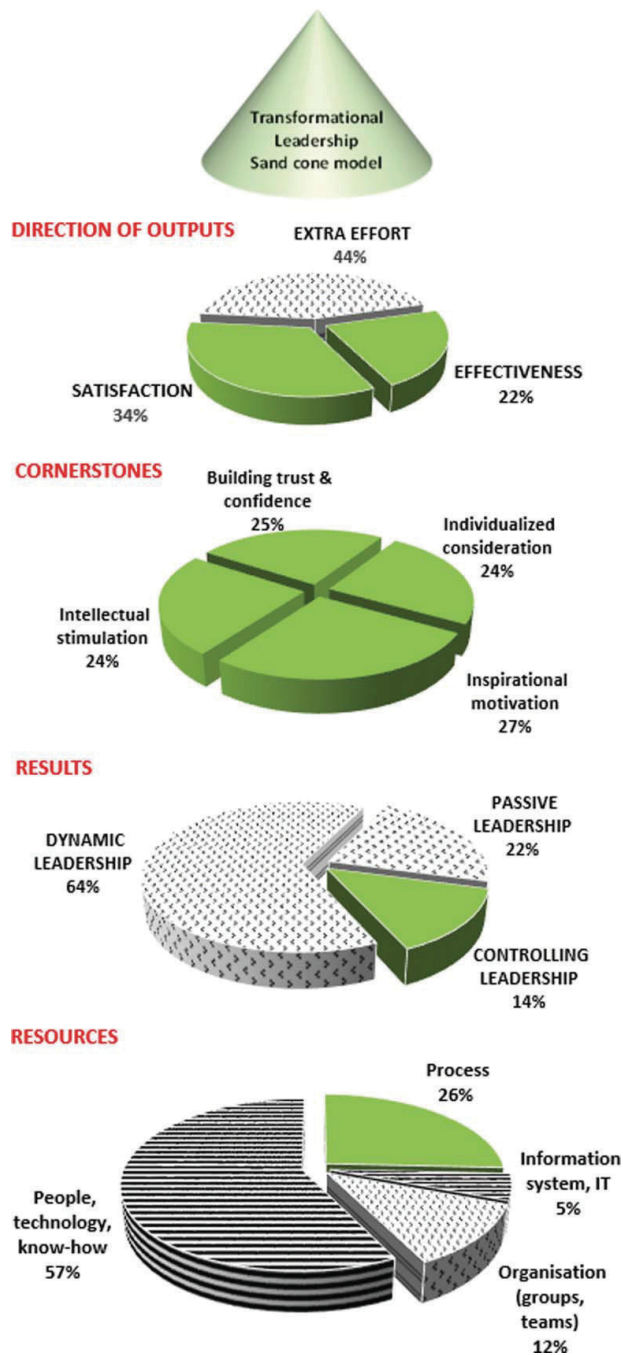


Figure 1. Transformational leadership sand cone model (Ha-Vikström and Takala 2016).

leaders in four different business units in a multinational energy company. With respect to the request of this company, different business units as well as the name of the company will not be revealed. The mid-managers were chosen since they have the largest amount of subordinates/followers compared to higher levels (Ha-Vikström and Takala 2016).

3.1. Questionnaire

The questionnaire used in this study was designed as a web survey, it consists of two main parts, the first part included 12 questions related to the participants' background; the second part contains 30 pairwise comparison statements. This second part was developed by Takala et al. during 2005–2008 and has been comprehensively improved since then. A sample of this questionnaire can be found in [Appendix 4](#). In order to maximise honest responses from the participants, we emphasised in the survey invitation email that there are no right or wrong answers, also that all answers will be completely anonymous.

3.2. Data collection

All in all, 138 survey invitations were emailed to the chosen mid-level managers/leaders at the same company but located in 21 different countries around the world (list of countries and locations can be found in [Appendix 1](#)). Of the 138 invitations, 86 leaders completed the survey, which gives a response rate of 62% (86/138). For a web-based survey, this is a robust result (Hoonakker and Carayon 2009; Shih and Fan 2008).

Data collection details:

Nationality region	(%)	N
Europe	35	(30/86)
North Europe	40	(34/86)
Middle East and Asia	25	(22/86)
Business unit		
A	16	(14/86)
B	14	(12/86)
C	16	(14/86)
D	53	(46/86)
Education		
Doctoral degree	6	(5/86)
Master's degree	36	(31/86)
Bachelor's degree	37	(32/86)
Other degree	21	(18/86)
Work experience		
1–5 years	17	(15/86)
6–10 years	36	(31/86)
11–15 years	20	(17/86)
16–20 years	13	(11/86)
over 20 years	14	(12/86)
Number of followers		
Over 10 followers	47	(41/86)
Less than 10	53	(45/86)
Leaders/followers have the same nationalities		
Yes/same nationalities	55	(47/86)
No	45	(39/86)

Responsibilities recently changed: 30% (25/86) of participants have recently or during this year had some significant responsibility changes (such as position, work conditions or location). This last factor was taken into account because it may have some impact on the leaders' decision-making behaviour which might reflect on the responses (Ha-Vikström and Takala 2016).

In order to increase the internal validity, only responses with an inconsistency ratio (ICR) value of 0.3 or lower can be considered as reliable or usable answers and can be analysed further. From AHP-first round of analysis, 74% (64/86) of the answers were usable, 24% (21/86) were disqualified due to a high ICR. A collection of *usable data* can be found in [Appendix 2](#).

3.3. Measures

The main tool we used in this study is the Expert ChoiceTM software package (which implements the AHP) and Microsoft Excel. First, we transfer the data received from the questionnaire to the Expert Choice software, from these first results all responses with high ICR will be disqualified. Second, the usable or qualifying data will be analysed further by following the transformational leadership concept and the traffic light value (see Appendix 3). Specifically, we apply the value of each behaviour to the five transformational leadership equations presented in Section 2.3. In the final results, each leader obtains a transformational leadership profile with clear traffic light colour (e.g. Figure 1) and also five different indexes: total leadership index, specific index, resource index, leadership index and outcomes index.

3.4. Reliability controls

In order to ensure the reliability of the measurement effects, we utilised different techniques for controlling common method biases. *First*, in the invitation email we assured respondents that their answers will be completely anonymous and that there are no right or wrong answers. *Second*, in the questionnaire, we add 12 extra pairwise comparison questions to control the possible inconsistencies of the answers. These extra questions should reduce biases in the retrieval stage of the response process (Podsakoff et al. 2003). *Third*, in the calculation and analysis process, we also use the ICR to disqualify all the inconsistent answers. *Fourth*, for each result, we made an equation control test, and for the total results we made inter-correlations. In addition, we also take into account the margin of error (with 95% confidence interval) for the analysis. *Finally*, we utilised a semi strong and weak market test (e.g. Fama 1970; Jensen 1978; Forss 2013) to confirm the low data correlation obtained from the inter-correlations analysis by interviewing a General Manager and a Director at the same studied company. According to Podsakoff (2003), this psychological separation between the measurement of the predictor and criterion variables helps to reduce the common method biases and increase the beneficial effects. The interviews with high level managers took place in a face-to-face meeting; both interviewees supported the high score correlation results (-0.66) between Effectiveness and Extra Effort factors. A table of data analysis and inter-correlations within 14 behaviour factors can be found in Appendix 5.

4. Results

Based on the quite symmetric results of indexes which we received from the calculation (the lowest index is 0.37 and the highest is 0.74), we considered that the mean/average is more appropriate to use than the median (Soong 2004).

In line with many previous findings, we find that *first*, the effectiveness of transformational leaders with higher education may be better than with lower education. *Second*, fresh leaders who have recently joined the company (within 1–5 years) are more effective – compete harder and may enhance the company's innovation better – than senior leaders (who have worked more than 20 years at the same company). *Third*, female leaders are more transformational effective than their male counterparts. *Fourth*, leaders in Middle East and Asia might be more effective than leaders in Europe and North Europe.

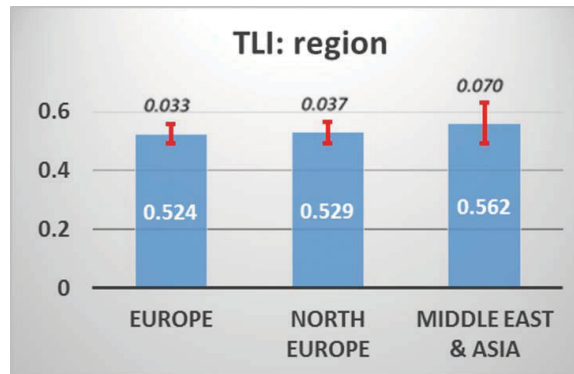


Figure 2. Transformational leadership index per region.

However, this result is quite ambiguous because of the unbalanced number of participants in these three regions. *Fifth*, unexpectedly, leaders in this studied company seem to fail to take advantage of their multinationalities subordinates, that is, leaders who have multicultural subordinates seem to be less effective. *Finally*, we find a clear positive link between the effectiveness of transformational leaders and a good financial health of a company, in other words, the better financial status, the better leaders. Figure 2 presents the average of the total transformational leadership index for the respondents from three nationality regions: Europe, northern Europe and the Middle East and Asia. *Europe* includes participants from Italy, France, Germany, Greece, Netherlands, Poland and the United Kingdom. *Northern Europe* includes participants from Finland, Sweden, Denmark and Norway. *The Middle East and Asia* include participants from Cameroon, India, Pakistan, Turkey and China. As a result, the leaders from the Middle East and Asia obtain the highest TL index. The red error bars with accompanying error values in *italics* are shown on the top of each sample group representing the confidence interval or margin of error.

Figure 3 presents the average of the total transformational leadership index for the respondents in four different business units. Due to confidentiality matters, these business units are coded A, B, C and D. The results show that the leaders from business D obtain the highest TL index and the leaders from business unit A obtain the lowest TL index.

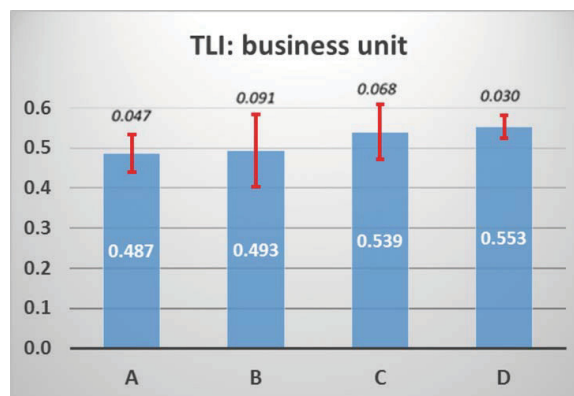


Figure 3. Transformational leadership index per business.

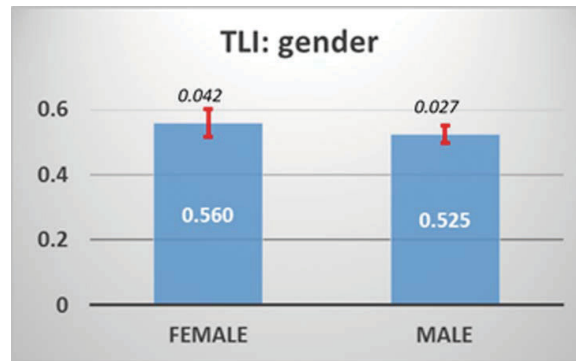


Figure 4. Transformational leadership index per gender.

Figure 4 presents the mean of the total transformational index for male and female participants. This is a male dominated multinational company, therefore the number of female participants is only 23% compared to 77% male participants. However, the results show that female leaders achieve a higher TL index than male leaders.

Figure 5 presents the mean of the total TL index for leaders who have followers either with the same nationality as themselves or not (the survey question is: do all of your subordinates have the same nationality as you?). The results show that the leaders who have the same nationality as their followers obtain a slightly higher TL index than the other leaders who have a team of diverse nationalities.

Figure 6 presents the mean of the total TL index for the participants according to their education. The results show that the leaders who have a doctor's degree obtain a higher TL index than the leaders who have lower degrees. However, due to the percentage of doctoral participants/leaders was only 3%, the margin of error in this group is quite high (0.19).

Figure 7 presents the mean of the total TL index of the participants according to the years of experience of working in the company (the survey question is: how long have you been working in this company?). The results show that the novice leaders who have recently joined the company (between 1 and 5 years ago) obtain a higher TL index than the senior leaders in the company.

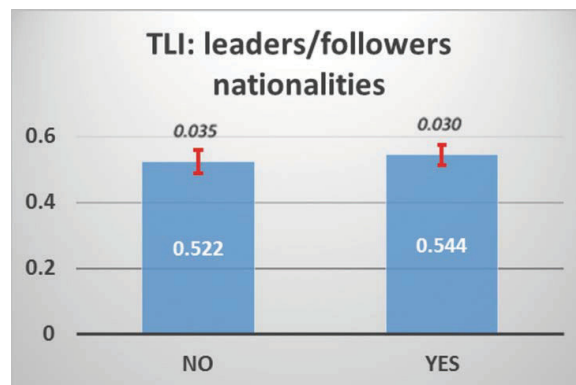


Figure 5. Transformational leadership index per different or same nationalities.

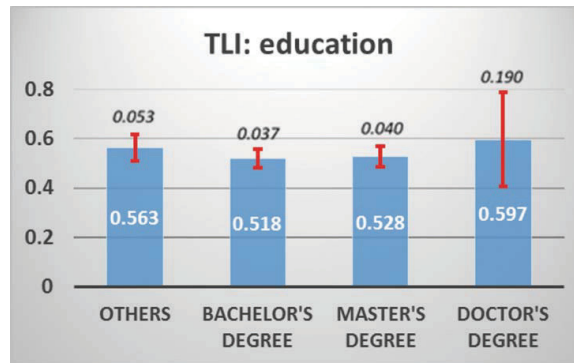


Figure 6. Transformational leadership index per education.



Figure 7. Transformational leadership index per working experience in the company.

Figure 8 presents the mean of the total TL index for leaders, according to the number of followers they have. The results show that the leaders who have more than 10 followers obtain a lower TL index than the leaders who have less than 10 followers.

Figure 9 presents the mean of the total TL index for the participants whose responsibilities recently (during this year) have or have not significantly changed. Change here, means for example change of location, position or working conditions. The results show two equal indexes and this provides an indication that the recently changed responsibilities do not impact on the leaders' effectiveness.

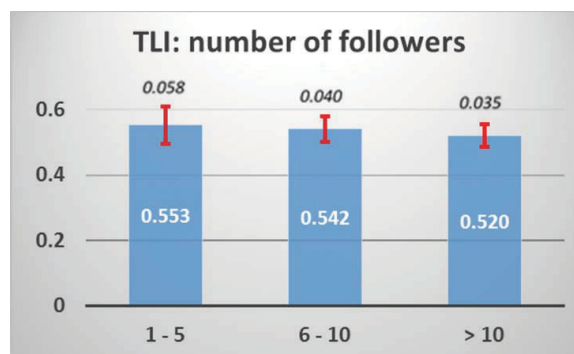


Figure 8. Transformational leadership index per number of followers.

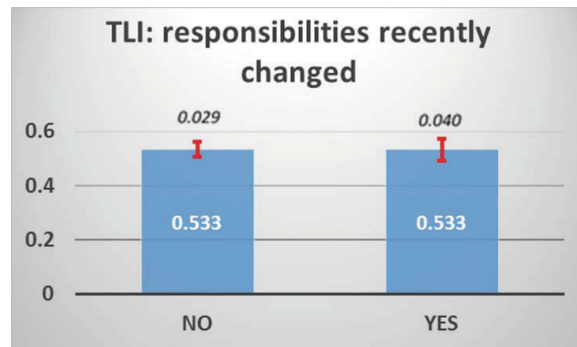


Figure 9. Transformational leadership index per responsibilities recently changed.

5. Discussion

Figure 10 is an extract from Figure 3 to Figure 10 to show a consolidation of the lowest index versus highest index of significant factors that impact on the transformational leadership. With respect to the research question: ‘Do national diversity, genders, education, working experience, as well as the financial situation of the business unit influence the effectiveness of transformational leaders?’, a group by group interpretation follows:

R1: Does education influence the effectiveness of transformational leaders? The results show that the leaders who have a doctoral degree obtain a higher TL index than the leaders who have lower degrees. However, as the percentage of participating doctor leaders was only 6%, consequently the margin of error became quite high (0.19). Nevertheless, Bass and Avolio (1993) and Bass (1999) emphasise that transformational leadership is value driven and affected by moral and personal development, training and development. In fact, in order to meet the constantly changing economic and

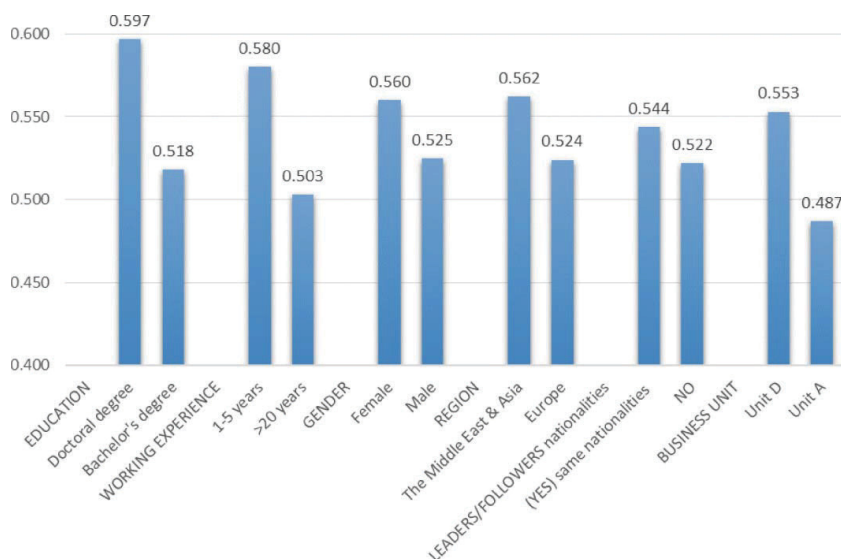


Figure 10. Transformational leadership highest index vs. lowest index per group.

academic environment, transformational leadership is essential within higher education so that adaptation can be completed (Ramsden 1998; Caldwell and Spinks 1999; Gous 2003; Basham 2010). Friedman (2014) also concludes ‘people are not born to be great leaders’ however, generally, a high educated leader might not automatically become a high-performing leader; without passion, discipline or courage; without leadership education and training, especially without the self-awareness and the unique set of skills for transformational leadership, leaders cannot achieve at the highest of their ability to help their organisation stay on ahead of the competition.

R2: *Does working experience influence the effectiveness of transformational leaders?* The results show that the leaders who have 1–5 years of working experience in the company have obtained a higher TL index than the senior leaders who have long working experience in the company. This interesting result may suggest as follows: young/novice or energetic newcomer leaders, who have recently (within 1–5 years) joined the company, might be under more pressure to show their best, or they may have more enthusiasm with new challenges than senior leaders. This result is consistent with the recent research findings of Grohsjean, Kober, and Zucchini (2016) that mobility leaders tend to strengthen their identification and compete harder in the new organisation. Earlier research has also revealed that employees’ mobility/newcomer leaders can help their companies develop innovations (Singh and Agrawal 2011) and increase market share (Somaya, Williamson, and Lorinkova 2008).

R3: *Does gender influence the effectiveness of transformational leaders?* The results reveal that female leaders obtain a higher TL index than male leaders. Bass, Avolio, and Atwater (1996) and Bass (1999) observe that several studies have shown that women tend to be somewhat more transformational than their male counterparts and therefore females are more likely to become effective leaders. In terms of interpersonal oriented behaviour, the results from self-ratings can be much different from others’ rating; however, in a study of 304 bank managers, in which 120 were women and 184 were men, Carless (1998) found that female managers were more transformational than male managers, regardless if they rated themselves or they were rated by their supervisors. Furthermore, Eagly and Johannesen-Schmidt (2001) have done a meta-analysis 47 studies and found that women exceeded men significantly on *individualised consideration*, an important element of the *cornerstones* component in transformational leadership. Hoyt (2013) and Bahe et al. (2014) observe that women have the kind of transformational leadership skills that the new global market requires. Clearly, multiple research findings also support this view and explain why female leaders are perceived more effective than male leaders. Because women make better androgynous leaders, they are more likely to adopt leadership behaviours that combine a task orientation and a person orientation and are transformational in nature; this is related to enhanced leadership effectiveness (Ayman and Korabik 2010).

Moreover, a recent research which utilises the Global Mindset Inventory by Javidan, Bullough, and Dibble (2016) discovered that ‘women demonstrated stronger global leadership profiles, in regard to passion for diversity, intercultural empathy, and diplomacy’

while ‘men tended to show strong global leadership regarding global business savvy, cosmopolitan outlook, and interpersonal impact.’ Yet, in this study, only 23% of the total qualified participants are female as this is a male dominated company.

R4: *Do different cultures influence the effectiveness of transformational leaders?* The results demonstrate that leaders from the Middle East and Asia (Turkey, India, Cameroon, Pakistan and China) obtain a higher TL index than leaders from Europe (Italy, France, Germany, Greece, Netherlands, Poland and the UK) or from northern Europe (Finland, Sweden, Norway and Denmark). This result reveals an interesting perspective between transformational leadership and culture. However, according to Ayman and Korabik (2010) leadership behaviours are not necessarily culturally universal, which means that this actual valuable leader’s behaviour may not work as effectively for those in heterogeneous work groups. In addition, the Global Leadership and Organizational Behavioural Effectiveness study has found both universal transformational characteristics of ideal leadership, and ones reflecting the cultural specificity within and between the proposed six clusters: charismatic/value based, team oriented, participatory, human oriented, autonomous and self-protective (House et al. 1999; Scandura and Dorfman 2004).

R5: *Does nationality diversity in a team influence the effectiveness of transformational leaders?* The results show that leaders who have followers with the same nationality as themselves acquire a higher TL index than the leaders who have multinational followers, even though Bass (1999) argues that transformational leadership is more likely to be enhanced further by the centrality of work in life and the high level of group orientation among followers. However, this result may be consistent with the findings of the Global Leadership Forecast study 2014 and 2015, which indicate that a successful national leader does not automatically become a high-performing leader of an internationally diversified team. As Fitzsimmons (2013) observes that multinational organisation often fails to take advantage of their nationality diversity employees. In order to benefit from the skills of diversity followers and enhance the leadership effectiveness, Fitzsimmons suggests that leaders should take a holistic approach to developing a multicultural ideology; the leaders should be aware of the range of their multicultural followers’ outcomes and lead them strategically.

R6: *Does the financial situation influence the effectiveness of transformational leaders?* This studied company consists of four business units, and interestingly, the leaders who obtained the highest TL index were from a business unit that has been financially stable for a quite long time, while the lowest index is acquired by leaders from business units being in more difficult financial situations. This result indicates a clear reciprocal effect between transformational leadership effectiveness and the financial health of a company. Admittedly, a recent study also observes the positive link between transformational leadership and the financial performance (Kazmi 2016). Furthermore, a new finding of Jin, Seo, and Shapiro (2016) suggests that happy leaders lead better. This can be interpreted that when the company’s financial status is low, it will probably affect the pleasantness at work of the leaders and their behaviours; as a consequence, the effectiveness of the leaders decreases.

In brief, although a large number of studies have examined the benefits of transformational leadership, this empirical study has predominantly focused on the new model to assess and measure the transformational leadership capabilities and profiles. By utilising the rational transformational leadership sand cone model and the transformational leadership indexes, based on the survey responses from 86 leaders from four different business units, our results reveal that in different extent, factors such as cultures, genders, education, working experience as well as the financial situation influence the effectiveness of transformational leaders.

5.1. Limitations and further research

The first limitation to consider is related to the characteristics of the sample; as this study was conducted in a male dominated organisation, the number of female participants was relatively small. Also the number of the participants who have a doctoral degree was limited, while the number of participants from northern Europe was dominant. We do not know whether these results would be generalisable to other types of organisations where the number of females and males is similar, or the sample size for each condition is somewhat more balanced. Therefore, future research should explore whether our findings are generalisable to samples from different organisational settings, such as profit organisations versus non-profit organisations, or private industries versus public sectors with different gender and culture composition.

Besides the limitation of generalisability, another limitation of this research is related to the self-assessment of the leaders. However, as Podsakoff et al. (2003) noted:

One of the major causes of common method variance is obtaining the measures of both predictor and criterion variables from the same source, and one way of controlling for it is to collect the measures of these variables from different sources.

Therefore, further studies to measure the effectiveness of middle managers but evaluate by managers' superiors would be needed. Finally, a longitudinal research to analyse the direction of sustainable career for global leaders would also be useful.

6. Conclusions

This empirical study highlights not only an effective measuring method, but also offers a fresh perspective to the theory of how culture, gender, education, working experience or financial status of the company as well as several other aspects might impact on the effectiveness of transformational leaders. This new theory may deliver new ideas into developing training programs to support leaders, especially senior leaders to increase their transformational role behaviour, and to lead their multicultural subordinates strategically, in order to take the company to the highest level of performance. In addition, for practical implications, the model and its assessing method can be used for recruitment or promotion purposes. Exclusively, the 'direction of outputs' component of the transformational leadership sand cone model can also be utilised as an appliance in developing sustainable careers for global leaders.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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References

- Avolio, B., F. Walumbwa, and T.J. Weber. 2009. "Leadership: Current Theories, Research, and Future Directions." *Annual Review of Psychology* 60: 421–449. doi:10.1146/annurev.psych.60.110707.16362.
- Ayman, R., and K. Korabik. 2010. "Leadership. Why Gender and Culture Matter." *American Psychological Association* 65 (3): 157–170.
- Bahe, S., R. Ruiz, A. Tejada, S. Sill, and M. Poole. 2014. "Women in Leadership: How a Woman's Background Affects Her Leadership Style." *Academic Journal of Social Justice* 6 (1): 74–80.
- Banks, G.C., K.D. McCauley, W.L. Gardner, and C.E. Guler. 2016. "A Meta-Analytic Review of Authentic and Transformational Leadership: A Test for Redundancy." *The Leadership Quarterly*. <http://dx.doi.org/10.1016/j.leaqua.2016.02.006>
- Bai, Y., L. Lin, and P.P. Li. 2016. "How to Enable Employee Creativity in a Team Context: A Cross-Level Mediating Process of Transformational Leadership." *Journal of Business Research* 69: 3240–3250.
- Basham, L.M. 2010. "Transformational and Transactional Leaders in Higher Education." *International Review of Business Research Papers* 6 (6): 141–152.
- Bass, B.M. 1999. "Two Decades of Research and Development in Transformational Leadership." *Europe Journal of Work and Organizational Psychology* 8 (1): 9–32.

- Bass, B.M., and B.J. Avolio. 1993. "Transformational Leadership and Organizational Culture." *Public Administration Quarterly* 17: 50.
- Bass, B.M., B.J. Avolio, and L. Atwater. 1996. "The Transformational and Transactional Leadership of Men and Women." *International Review of Applied Psychology* 45: 5–34.
- Bass, B.M., and R.E. Riggio. 2006. *Transformational Leadership*. 2nd ed. Mahwah, NJ: Lawrence Erlbaum Associates. ISBN 0-8058-4761-8.
- Bass, B.M., and P. Steidlmeier. 1999. "Ethics, Character, and Authentic Transformational Leadership Behaviour." *Leadership Quarterly* 10 (2): 181–217.
- Bono, J.E., and T.A. Judge. 2003. "Self-Concordance at Work: Toward Understanding the Motivational effects of Transformational Leaders." *Academy of Management Journal* 46: 554–571.
- Caldwell, B.J., and J.M. Spinks. 1999. *Beyond the Self-Managing School: Student Outcomes and the Reform of Education Series*. London: Falmer Press.
- Carless, S.A. 1998. "Gender differences in Transformational Leadership: An Examination of Superior, Leader, and Subordinate Perspectives." *Sex roles* 39: 887–902.
- Dirks, K., and D. Ferrin. 2002. "Trust in Leadership: Meta-Analytic Findings and Implications for Research and Practice." *Journal of Applied Psychology* 87 (4): 611–628.
- Duffy, F.M. 2006. *Power, Politics, and Ethics in School Districts: Dynamic Leadership for Systemic Change, Leading Systemic School Improvement*. Lanham, MD: Rowman and Littlefield Publishing Group. ISBN-13: 978-1578863181.
- Eagly, A.H., and M.C. Johannesen-Schmidt. 2001. "The Leadership Styles of Women and Men." *Journal of Social Issues* 57: 781–797.
- Fama, E. 1970. "Efficient Capital Markets: A Review of Theory and Empirical Work." *The Journal of Finance* 25 (2): 383–417.
- Fitzsimmons, S.R. 2013. "Multicultural Employees: A Framework for Understanding How They Contribute to Organizations." *Academy of Management Review* 38 (4): 525–549.
- Forss, T. 2013. "Improving Operational Performance within Social Housing." PhD diss., University of Vaasa.
- Friedman, S.D. 2014. *Leading the Life You Want*. Boston, MA: Harvard Business Review Press. ISBN-978-1-4221-8941-2.
- Gous, M. 2003. "Leadership in Support of Learning for an Unknown Future." Paper presented at the HERTDSA 2003 conference. <http://surveys.canterbury.ac.nz/herdsa03/pdfsnon/N1071.pdf>.
- Grohsjean, T., P. Kober, and L. Zucchini. 2016. "Coming back to Edmonton: Competing with Former Employers and Colleagues." *Academy of Management Journal* 59 (2): 394–413.
- Hautala, T. 2005. "Personality and Transformational Leadership: Perspectives of Subordinates and Leaders." PhD diss., University of Vaasa.
- Ha-Vikström, T., and J. Takala. 2016. "Knowledge Management and Analytical Modelling for Transformational Leadership Profiles in a Multinational Company." In *Successes and Failures of Knowledge Management*, edited by J. Liebowitz, 151–174. Cambridge: Elsevier.
- Hoonakker, P., and P. Carayon. 2009. "Questionnaire Survey Nonresponse: A Comparison of Postal Mail and Internet Surveys." *International Journal of Human-Computer Interaction* 25: 348–373.
- House, R.J., P.J. Hanges, S.A. Ruiz-Quintanilla, P.W. Dorfman, M. Javidan, M. Dickson, and V. Gupta. 1999. "Cultural Influences on Leadership and Organizations: Project GLOBE." *Advances in Global Leadership* 1 (2): 171–233.
- Hoyt, C.L. 2013. "Women and leadership." In *Leadership Theory and Practice*, 6th ed., edited by P. Northouse, 349–382. Thousand Oaks, CA: Sage.
- Javidan, M., A. Bullough, and R. Dibble. 2016. "Mind the Gap: Gender Differences in Global Leadership Self-Efficacies." *Academy of Management Perspectives* 30 (1): 59–73.
- Jensen, M.C. 1978. "Some Anomalous Evidence Regarding Market Efficiency." *Journal of Financial Economics* 6 (2): 95–101.
- Jin, S., M-G. Seo, and D.L. Shapiro. 2016. "Do Happy Leaders Lead Better? Affective and Attitudinal Antecedents of Transformational Leadership." *The Leadership Quarterly* 27: 64–84.
- Judge, T.A., and J.E. Bono. 2000. "Five-Factor Model of Personality and Transformational Leadership." *Journal of Applied Psychology* 85: 751–765.

- Jung, D.I., and B.J. Avolio. 1999. "Effects of Leadership Style and Followers' Cultural Orientation on Performance in Group and Individual Task Conditions." *Academy of Management Journal* 42: 208–218.
- Kazmi, S.A.Z. 2016. "Fusing Strategic Thinking and Transformational Leadership to Harness new Product Development Team Dynamics for Innovation." PhD diss., University of Vaasa.
- Kazmi, S.A.Z., M. Naaranoja, and J. Takala. 2013. "Diverse Workforce Supported Through 'Transformational Leadership' Ensures Higher Operational Responsiveness" *Global Business Review* 2 (4): 73–77. doi:10.5176/2010-4804_2.4.253.
- Kirkpatrick, S.A., and E.A. Locke. 1996. "Direct and Indirect Effects of Three Core Charismatic Leadership Components on Performance and Attitudes." *Journal of Applied Psychology* 81: 36–51.
- Lehmann-Willenbrock, N., A.L. Meinecke, J. Rowold, and S. Kauffeld. 2015. "How Transformational Leadership Works during Team Interactions: A Behavioral Process Analysis." *The Leadership Quarterly* 26: 1017–1033.
- Li, C., H. Zhao, and T.M. Begley. 2015. "Transformational Leadership Dimensions and Employee Creativity in China: A Cross-Level Analysis." *Journal of Business Research* 68: 1149–1156.
- Maxwell, J.C. 2001. *The 17th Irrefutable Laws of Teamwork*. Nashville, TN: Thomas Nelson.
- Nissinen, V. 2006. *Deep Leadership*. 2nd ed. Hämeenlinna: Talentum Oy.
- Podsakoff, P.M., S.B. MacKenzie, and W.H. Bommer. 1996. "Transformational Leader Behaviors and Substitutes for Leadership as Determinants of Employee Satisfaction, Commitment, Trust, and Organizational Citizenship Behaviors." *Journal of Management* 22: 259–298.
- Podsakoff, P.M., S.B. MacKenzie, J.-Y. Lee, and N.P. Podsakoff. 2003. "Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies." *Journal of Applied Psychology* 88 (5): 879–903. doi:10.1037/0021-9010.88.5.879.
- Podsakoff, P.M., S.B. MacKenzie, R.H. Morrman, and R. Fetter. 1990. "Transformational Leader Behaviors and their Effects on Follower's Trust in Leader Satisfaction, and Organizational Citizenship Behaviors." *Leadership Quarterly* 1: 107–142.
- Ramsden, Paul 1998. "Managing the Effective University." *Higher Education Research and Development* 17 (3): 347–370.
- Saracoglu, B.O. 2013. "Selecting Industrial Investment Locations in Master Plans of Countries." *European Journal of Industrial Engineering* (Inderscience Enterprises Ltd.) 7 (4): 416–441.
- Scandura, T., and P. Dorfman. 2004. "Leadership Research in an International and Cross-Cultural Context." *The Leadership Quarterly* 5 (2): 277–307.
- Shih, T., and X. Fan. 2008. "Comparing Response Rates from Web and Mail Surveys: A Meta-Analysis." *Field Methods* 20: 249–271.
- Singh, J., and A. Agrawal. 2011. "Recruiting for Ideas: How Firms Exploit the Prior Inventions of New Hires." *Management Science* 57 (1): 129–150.
- Somaya, D., I.O. Williamson, and N. Lorinkova. 2008. "Gone but not Lost: The different Performance Impacts of Employee Mobility between Cooperators Versus Competitors." *Academy of Management Journal* 51 (1): 936–953.
- Soong, T.T. 2004. *Fundamentals of Probability and Statistics for Engineers*. Chichester: John Wiley & Sons Ltd.
- Sosik, J.J., and D.I. Jung. 2010. *Full Range Leadership Development: Pathways for People, Profit, and Planet*. New York, NY: Psychology Press, Taylor & Francis Group.
- Takala, J., H. Hirvelä, P. Hiiippala, and V. Nissinen. 2005. "Management and Deep Leadership Sand Cone Model for Human Resource Allocation, the First Phase of the Study." Paper presented at the Fourth International Automation and Manufacturing Conference, ATDC (Advanced Technologies for Developing Countries), Slavonski Brod, September 21–24.
- Takala, J., H. Hirvelä, P. Hiiippala, and V. Nissinen. 2006. "Management and Deep Leadership Sand Cone Model for Human Resource Allocation, the Second Phase of the Study." Paper presented at the Eleventh International Conference on Productivity and Quality Research, ICPQR' 2005, New Delhi, December 12–15. Paper presented at the International Conference on Multinational Enterprises—Multinational Enterprise in the Global Economy, Taipei, March 14–16.

- Takala, J., A. Kukkola, and J. Pennanen. 2008. "Prospector, Analyzer and Defender Models in Directions of Outcome in Transformational Leadership." Paper presented at the 17th International Conference on the Israel Society for Quality, ISAS, Jerusalem, November 18–20. The 10th Management International Conference, MIC 2009 Sousse, Tunis, November 25–28.
- Takala, J., J. Leskinen, H. Sivusuo, J. Hirvelä, and T. Kekäle. 2006. "The Sand Cone Model: Illustrating Multi-Focused Strategies." *Management Decision* 44 (3): 335–345.
- Takala, J., J. Pennanen, P. Hiiippala, A. Maunuksela, and O. Kilpiö. 2008. "Decision Maker's Outcome as a Function of Transformational Leadership." In *Simplify Leadership and Coaching Effectiveness*, edited by T. Kinnunen, 67–86. Aldus Oy, Lahti: Deep Lead Oy.
- The Global Leadership Forecast study. 2014 and 2015. "The Seventh Report Development Dimensions International (DDI)." http://www.ddiworld.com/DDI/media/trend-research/glf-multinational-report_tr_ddi.pdf?ext=.pdf
- Wang, X-H., T-Y. Kim, and D-R. Lee. 2016. "Cognitive Diversity and Team Creativity: Effects of Team Intrinsic Motivation and Transformational Leadership." *Journal of Business Research* 69: 3231–3239.
- Williams, L.E. 1998. *Servants of the People: The 1960s Legacy of African-American Leadership*. New York: St. Martin's Press.

APPENDIX 1: Participants' locations and nationalities.

No.	Participants' locations	<i>n</i>	No.	Participants' nationalities	<i>n</i>
1	Cameroon	1	1	British	5
2	China	6	2	Cameroonian	1
3	Denmark	2	3	Chinese	7
4	Estonia	1	4	Danish	2
5	Finland	25	5	Dutch	3
6	France	3	6	Estonian	1
7	Germany	8	7	Finnish	25
8	Greece	3	8	French	3
9	India	7	9	German	8
10	Italy	4	10	Greek	3
11	Netherlands	2	11	Indian	11
12	Norway	2	12	Italian	4
13	Pakistan	1	13	Norwegian	2
14	Poland	3	14	Pakistan	1
15	Saudi Arabia	1	15	Polish	4
16	Sweden	3	16	Swedish	4
17	Taiwan	1	17	Turkish	2
18	Turkey	2		Total	86
19	United Arab Emirates	4			
20	United Kingdom	6			
21	United States	1			
	Total	86			

APPENDIX 2: Collection of usable data from the survey.

Nationality region	%	N
Europe	36	(23/64)
North Europe	45	(29/64)
Middle East and Asia	19	(12/64)
Business unit		
A	14	(9/64)
B	13	(8/64)
C	19	(12/64)
D	55	(35/64)
Education		
Doctoral degree	5	(3/64)
Master's degree	41	(26/64)
Bachelor's degree	38	(24/64)
Other degree	17	(11/64)
Work experience		
1–5 years	17	(11/64)
6–10 years	41	(26/64)
11–15 years	17	(11/64)
16–20	11	(7/64)
Over 20 years	14	(9/64)
Number of followers		
Over 10 followers	50	(32/64)
Less than 10	50	(32/64)
Leaders/followers have the same nationalities		
Yes/same nationalities	50	(32/64)
No	50	(32/64)

APPENDIX 3: Transformational leadership sand cone traffic light values.

Directions of outputs/optimal 33%

50–100 (red)
40–50 (yellow)
20–40 (green)
10–20 (yellow)
0–10 (red)

Cornerstones/optimal 25%

40–100 (red)
30–40 (yellow)
20–30 (green)
10–20 (yellow)
0–10 (red)

Dynamic leadership/optimal 82%

70–100 (green)
50–70 (yellow)
0–50 (red)

Controlling and passive leadership/optimal 9%

25–100 (red)
15–25 (yellow)
0–15 (green)

Resources/optimal 25%

40–100 (red)
30–40 (yellow)
20–30 (green)
10–20 (yellow)
0–10 (red)

APPENDIX 5: Data analysis and inter-correlations.

	IC	IM	IS	BT	PC	PT	IT	OR	EF	SA	EE	PL	CL	DL	TLI
Diff. IC	1.00														
Diff. IM	-0.40	1.00													
Diff. IS	-0.45	-0.05	1.00												
Diff. BT	-0.04	-0.54	-0.50	1.00											
Diff. PC	-0.03	-0.22	0.04	0.19	1.00										
Diff. PT	0.12	0.10	-0.23	0.02	-0.42	1.00									
Diff. IT	-0.13	0.12	0.06	-0.06	-0.38	-0.38	1.00								
Diff. OR	0.04	-0.04	0.20	-0.18	-0.10	-0.48	-0.19	1.00							
Diff. EF	-0.24	-0.02	0.21	0.03	0.03	-0.12	0.21	-0.11	1.00						
Diff. SA	0.12	-0.23	-0.16	0.26	-0.06	0.09	0.01	-0.07	-0.30	1.00					
Diff. EE	0.12	0.20	-0.06	-0.23	0.02	0.04	-0.19	0.16	-0.66	-0.52	1.00				
Diff. PL	0.20	-0.14	0.00	-0.04	0.12	-0.03	-0.12	0.03	0.07	0.04	-0.09	1.00			
Diff. CL	-0.05	0.03	0.06	-0.04	-0.13	-0.21	0.21	0.18	-0.07	0.04	0.03	-0.50	1.00		
Diff. DL	-0.20	0.14	-0.04	0.07	-0.07	0.15	0.01	-0.14	-0.03	-0.07	0.08	-0.85	-0.02	1.00	
TL index	-0.16	-0.09	0.10	0.12	0.03	-0.43	0.28	0.24	0.08	0.27	-0.29	-0.48	0.26	0.40	1.00

Note: Diff. = difference value. IC = Individualized consideration; IM = Inspirational motivation; IS = Intellectual stimulation; BT = Building trust; PC = Processes; PT = People, technology and know-how; IT = Information technology systems; OR = Organisation groups and teams; EF = Effectiveness; SA = Satisfaction; EE = Extra Effort; PL = Passive leadership; CL = Controlling leadership; DL = Dynamic leadership. These are 14 factors included in transformational leadership the sand cone model. All these acronyms were explained in Section 2.2.

People-, Process- and Goal-Focused Leadership Behaviour: An Empirical Study in a Global Company

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This study explores the focus of leadership behaviours that perceived and experienced by leaders in a multinational company. By using triangulation method including questionnaires, in-depth interviews and observations, we analyse the data collected from twenty managers across organisational levels. The results reveal the patterns of managerial behaviour in three key focus areas for success: *people, process and goal*. Directors and general managers are more *people-focused* than line managers, who in turn tend to be more *process-focused*. The research findings bridge the gap in the field and initiate a new normative leadership behaviour model (*people-, process and goal-focused*), which can be used to directly support leaders in enhancing their leadership skills as well as for recruitment or promotion purposes. The model can be utilized as an aid to organisations when developing training programs to support leaders in different types of organisations (for-profit or non-profit) to focus their development efforts on organizational success.

Key words: leadership, leadership behaviour, people-focused, process-focused, goal-focused

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Introduction

Today's business world is changing more rapidly and more dramatically than ever before. Changes are driven by, among other things, advanced technological innovation, globalization and hyper-competition. In order to deal with such a complex dynamic environment, business leaders must help their companies to adapt to rapid speed of change in order to ensure enduring organisational success. Business leaders, meanwhile, need to enhance employees' aspiration and activate their higher order needs through ethical, symbolic and helping behaviours (Bass et al. 2003; Antonakis and House 2014).

Despite agreement on the importance of leadership behaviour in business success, since 1940s it was becoming clear that there were

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two separate but related paths for thinking about leadership behaviours orientations. One path, the relationship/people-oriented behaviour (Fleishman 1957; Bass 1967; Fiedler and House 1988; Johannsen 2012); the second path, the task- or goal-oriented leadership behaviour (Fleishman 1953a; 1953b; Halpin 1954; Stogdill 1963; House 1971; Bass 1990; Griffin and Ebert 2010; Anzalone 2012); and the third path, non-relations-oriented and non-task-oriented, which is called *laissez-faire* or inactive leadership behaviours (Bass and Avolio 1995; 1997). Unrelated to these paths, De Jong and Den Hartog (2007) proposed that there are 13 relevant leadership behaviours including innovative role-modelling, stimulating knowledge diffusion, providing vision, providing resources, organizing feedback, monitoring, and consulting etc. (see table 1).

The key problem is that many various titles have been used to categorize the task-oriented leadership behaviours. For example, task-orientation can be referred to goal achieving (Cartwright and Zander 1960) or goal emphasizing (Bowers and Seashore 1966) or initiating structure (Hemphill 1950). Actually, some of them are similar and some of them are dissimilar. Furthermore, in terms of process-oriented behaviours, even Harrington (2011) explains that if people are the heart of the organization, then processes represent the brain. This important path (business process-oriented leadership behaviour) as well as the combination of three paths: people, process and goal at the same time remains unexplored.

Based on above shortcoming, the aim of this study is to explore leadership behaviours as perceived or experienced by different levels of leaders/managers in a company, especially in three key focus areas: people, process, and goal. By relating directly to the real, practical experience of people in a business organization, we pursue to answer the following research question: how leadership behaviour is manifested across organisational levels.

As Srikumar Rao (2010), a TED Talk speaker and the author of *Happiness at Work*, has said:

We live in a world where what we (people) think of, what we invest in, is the outcome (goal). We define our life in the following way: here I am, here is where I want to go, these are the steps (process) I have to take in order to get from where I am to where I want to go, and if I succeed, life is wonderful. And if you don't succeed, still wonderful, because now you have a new starting point, and from that new starting point, you select another outcome and keep going.

People-, Process- and Goal-Focused Leadership Behaviour



FIGURE 1 Essential Focus Areas for Leadership Behaviour

We use triangulation method, a combination of qualitative and quantitative approaches, comprising a questionnaire, in-depth interviews and observation to examine data collected from 20 female and male managers, 90% of whom were European, across different organisational levels: namely, directors, general managers and line managers. Each of them has an engineering or information technology background within a global company in Northern Europe (at the request of the studied company, its name will not be revealed).

This paper proceeds as follows. First, we briefly explain our conceptual framework. We then describe our methodology, the way in which we collected and analysed the data, as well as the validity and reliability of the work. We next provide details of our findings and present our evaluations. Finally, we conclude with a discussion of the findings, limitations and opportunities for further research.

Conceptual Framework

The conceptual framework for this research is constructed, not found. It incorporates different partial pieces that are borrowed from the leadership theories but ‘the overall coherence, is something that we build, not something that exists ready-made’ (Maxwell 2012). These varying theoretical perspectives are supposed to be useful and enrich our understanding of organisational phenomena (Hitt et al. 2007). Our conceptual framework are constructed from four main sources (see Maxwell 2012):

1. *Researcher’s experiential knowledge*: after over 20 years in a global business environment, we have got used to the mind-sets of ‘to think out of the box.’ Despite many existing theories and research about leadership behaviour, we endeavour to other ideas from outside this traditionally defined field, to incorporate different attitudes and thoughts reflecting what managers experience in their real working life.
2. *Existing theory and research*: table 1 presents a brief previous research on different leadership behaviours.
3. *Our pilot and exploratory research*: we attempt to integrate different approaches survey, in-depth interview and observation. We utilize the triangulation approach in order to get greater breadth of perspectives and a deeper understanding of the leadership

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TABLE 1 Previous Research on Leadership Behaviours

Category	Authors	Focus on
Relations-oriented leadership behaviours	Hemphill (1950)	Consideration regarding wellbeing and contributions of followers
	Fleishman (1957)	Emphasizing employee needs
	Blake and Mouton (1964)	Concern for people
	Mann (1965)	Human relation orientation
	Bowers and Seashore (1966)	Interaction facilitative and supportive
	Anderson (1974)	People centred
	Ouchi (1981)	Participatory decision-making
	Misumi and Peterson (1985)	Building mutual trust and democratic
	Bass and Avolio (1995; 1997)	Idealized influence, individualized consideration, intellectual stimulation, and inspirational motivation.
	Griffin and Ebert (2010)	Prioritize the welfare of everyone in a team
Conger (2011)	Encouraging the interaction within teams	
Task-oriented leadership behaviours	Hemphill (1950)	Initiating structure
	Katz, Maccoby, and Morse (1950)	Focused on production
	Fleishman (1951)	Defining group activities
	Fleishman (1957)	Production emphasizing
	Cartwright and Zander (1960)	Goal achieving
	Blake and Mouton (1964)	Concerned with production
	Bowers and Seashore (1966)	Goal emphasizing
	Reddin (1977) and Zaleznik (1977)	Autocratic and management
	Indvik (1986)	Achievement oriented
	Bass and Avolio (1995; 1997) Bass (2000) Bass and Bass (2008) Conger (2011)	Contingent reward, management-by-exception (active), and management-by-exception (passive)
Non relations-oriented and non-task-oriented	Bass and Avolio (1995; 1997)	Laissez-faire, avoid making decisions

Continued on the next page

behaviour phenomenon, not leadership in general (Mingers 2001; Venkatesh, Brown, and Bala 2013). Through multiple investigation lines, we are more confident in our research data and enhance the creative potential of the study; consequently, we are able to provide a clearer understanding of the problem and easily to reveal unique findings (Thurmond 2001).

People-, Process- and Goal-Focused Leadership Behaviour

TABLE 1 Continued from the previous page

Category	Authors	Focus on
13 relevant leadership behaviours findings	De Jong and Den Hartog (2007)	Innovative role-modelling, support for innovation, intellectual stimulation, stimulating knowledge diffusion, providing vision, providing resources, organizing feedback, consulting, delegating, monitoring, recognition, rewards and task assignment.

4. *Our thought experiments*: the purpose of our thought experiments is to describe reality, the present business environment. The most essential objectives that could define business success should be *people* and *goal*. However, how could the people reach the goal, in which way? The answer is we have to act and achieve it in a good procedure or *process*.

While management and leadership are distinct concepts or views, in this study, leadership and management are roles that are not mutually exclusive because our informants fulfilled these roles. We use 'managers' and 'leaders' interchangeable in referring to the informants (see De Jong and Den Hartog, 2007).

Research Methodology

This paper adopts the mixed methods approach, which combines qualitative and quantitative methods, involving the use a questionnaire, followed by in-depth interviews, in order to examine the behaviours of 20 managers from three management levels (directors, general managers and line managers) within a global company. The purpose in applying this method is to integrate all the collected information into a cohesive whole, as well as increase confidence in the research data, reveal unique findings, integrate theories and provide a clearer understanding of the problem (Jackson and Parry 2011; Venkatesh, Brown, and Bala 2013). Figure 2 describes our research design.

The weak and semi-strong market test (Jensen 1978; Forss 2013) was conducted in the form of a short interview with a director, a general manager and a line manager to confirm the inter-correlations of the findings.

QUESTIONNAIRE

The questionnaire used in this study was designed as a web survey. The survey introduction briefed the respondent about the purpose of the study and provided a confidentiality statement. The invitation

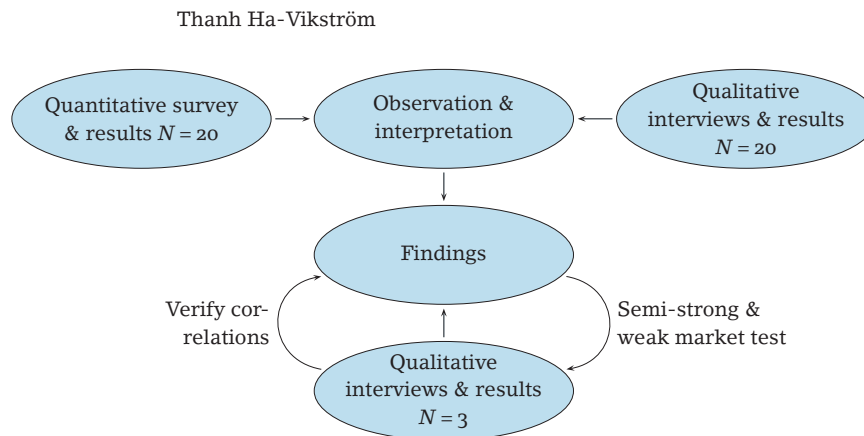


FIGURE 2 Research Design

was sent to 28 leaders across different organisational levels in 2016, 20 of whom agreed to participate in the research. At that point, a time and date were established for interviews, while leaders were asked to fill in the survey at their earliest convenience. A personal code was also given to each leader in order to complete the web survey so that his/her answers could be correctly attached to his/her interview responses for the purposes of data analysis.

The goal of the survey was to identify the participants' leadership profile and investigate how leaders utilized their organization's existing resources (such as their people, know-how, processes and information technology systems), as well as how they applied their ability to lead people in order to achieve a long-term or overall aim. The survey consisted of two main parts: the first part, which was fully consumed in this study, included 11 questions related to the participants' background; the second part contained 14 questions covering 14 leadership behaviours, which were incorporated into the transformational leadership sand cone model (Ha-Vikström and Takala 2016a; 2016b; 2016c), of which only 50% were used in this study because they focused on important insights of behaviours and attitudes among leaders. Furthermore, due to the space limitations in the article, we decided not to present the remaining survey results, as they were related to the effectiveness of transformational leadership.

In order to meet the aim of the research and maximize the likelihood of honest responses from the participants, we emphasized in the survey that there were no right or wrong answers, as well as stressed that all answers were completely anonymous. This should have helped to reduce the anxiety of the participants or ensured that they were 'less likely to edit their responses to be more consistent

People-, Process- and Goal-Focused Leadership Behaviour

with how they think the researcher wants them to respond' (Podsakoff et al. 2003).

IN-DEPTH INTERVIEWS

We conducted interviews throughout October and November 2016. The purpose of the interviews was to capture the attitudes, behaviours and perspectives in the context of being a manager in a global company. Skype video calling was used to make it possible for the interviewees to participate. Before recording the interview, we clearly explained to the participants about the aims and importance of the study, as well as assured them about the confidentiality. A semi-structured interview technique was used with four key open-ended questions and follow-up questions (Seidman 2013; Padgett 2016). Overall, 20 interviews were conducted, with each interview typically lasting less than an hour. The interviews were audio recorded for transcription and coding purposes. Furthermore, in the verification phase, after the results were generated, we also conducted a short interview, which is known as a weak and semi-strong market test with three leaders (a director, a general manager and a line manager) to confirm our final results.

OBSERVATION

We could utilize the 'complete participant' or 'participant observation' type in this study, which means the researcher intervenes in the environment (Gold 1958) due to that the researcher has been working in the studied company over the past 20 years. Based on that, the participants have been well known to the researcher in different contexts for a quite long time. This existence of a long-term relationship helped the researcher disclose the leaders' deeper thoughts and feelings better than otherwise would have been possible (Maclean, Harvey, and Chia 2012). As this study focused on the leaders' behaviour and attitude, that perception could be effortlessly observed via social contact and business relationship. In order to make the observations more reliable, we quantified the observation data, and in unclear circumstances the researcher contacted the informants for confirmation. From such a perspective, the observations in this study play an extra role to strengthen the facts based on the data collected from the questionnaire and the interviews.

DATA COLLECTION

The details of the data collection obtained from the questionnaire are presented in table 2.

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TABLE 2 Data Collection Obtained from the Questionnaire

Position	Directors	35	(7/20)
	General managers	45	(9/20)
	Line managers	20	(4/20)
Gender	Male	65	(12/20)
	Female	35	(7/20)
Leaders' nationality region	Northern Europe	90	(18/20)
	Asia	10	(2/20)
Age	35-44 years	25	(5/20)
	45-54 years	50	(10/20)
	>54 years	25	(5/20)
Working experience	6-19 years	50	(10/20)
	>20 years	50	(10/20)
Leadership experience	1-5 years	10	(2/20)
	6-10 years	25	(5/20)
	>10 years	65	(13/20)
Total number of subordinates	Less than 10	50	(10/20)
	More than 10	50	(10/20)
Education	Doctoral degree	5	(1/20)
	Master's degree	50	(10/20)
	Bachelor's degree	35	(7/20)
	Below bsc	10	(2/20)

DATA ANALYSIS

The data analysis was conducted in five steps. First, the interviews were transcribed verbatim into a text file, after which we manually separated the original raw data into Excel to enable easy sorting, filtering and grouping of the data for later comparison. Second, we performed *content analysis* to analyse the text in the transcripts and identify the core meaning behind each answer. Third, based on these core meanings, we identified the categories or patterns by using a technique called 'open coding' (Strauss and Corbin 1998, 223) or 'analytical coding' (Corbin and Strauss 2007; Merriam and Tisdell 2015). In this stage, we worked back and forth between these codes (Saldaña 2015) in the whole data set, searching for meaningful labels and themes. Next, we used the 'quantitizing' technique of Miles and Huberman (1994) to convert the qualitative data or verbal results into numerical responses. Fourth, we calculated the survey results for each respondent and then compared these results with the data obtained from the interviews (the third step above) by applying the 'member checking' strategy, which sends the results of the analysis

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back to the participants. In this sense, the survey data became more meaningful when interpreted in the light of essential qualitative information; at the same time, we were able to identify ambiguous or uncertain information. Fifth, with the use of a constant comparative method (Lincoln and Guba 1985; Lincoln, Lynham, and Guba 2011), we compared all data with each other, searching for convergences and eliminating discrepancies. This technique provided a rather rich and comprehensive picture of leaders' behaviour, such that we were able to discover contextual patterns and uncover different dimensions of the research problem.

VALIDITY AND RELIABILITY

In order to ensure the internal and external reliability of the measurements, we utilized different techniques for controlling common method biases. Firstly, in terms of internal validity, we utilized data triangulation, both quantitatively and qualitatively, in order to increase the credibility and validity of the results. Furthermore, we also conduct a control test for each equation.

Secondly, for external validity, we followed Jensen (1978) and Forss (2013) in choosing a weak and semi-strong market test to check low and high data correlation coefficients acquired from our inter-correlations analysis. This was carried out by interviewing three managers (a director, a general manager and a line manager), in which we showed them the final results in order to receive their feedback and confirmation. A tabulated presentation of the data analysis and inter-correlations between 14 factors can be found in the discussion section. Finally, we consulted the literature related to different types of leadership behaviour in order to verify and validate the findings. In all, this indicates that the measurement method used has internal and external reliability.

Findings

The data analysis reveals seven specific pairwise categories reflecting leaders' behaviour and their actual deep meanings in real-life context, as follows.

PAIR 1: FACTS VERSUS PHILOSOPHY

Between being a *doer* (facts) and being a *thinker* (philosophy), Hill (2003) highlights that, prior to managerial promotion, most people work as 'doers' or contributors; their primary responsibility is to perform tasks. Meanwhile, the 'thinker' prefers to seek a wider context,

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imagines different possibilities of how things should be done, considers why or how everything connects and so forth. Fullan (2006) defines another type of leaders' behaviour, that is, 'system thinkers or theoreticians.' In fact, the essence perception of this pairwise distinction '*facts versus philosophy*' is essentially about a theory of attitude, which acts as a guiding principle for leadership behaviour. The distinction between these two behaviours can be interpreted and evaluated throughout our interviews and observations, especially in the first interview question when the leaders were asked to narrate their own professional career story. *Philosophical* leaders tend to describe their career story in a figurative or poetic way, for example, a respondent could take several minutes to answer a short question:

In an earlier part of my career in 1992, I learned from other leaders and copied what they did a little bit. A leader is someone who really believes in you and trusts you [the participant explained with an example]. When the guy is actually trying his best, why interfere. [Male general manager – *philosophy*]

Meanwhile, factual leaders tend to express themselves in a more specific, literal way, for example:

I started 22 years ago as project engineer. In 1999, I moved over to become a development manager, but I left the company in 2002. Two years later, in 2004, I returned. And since the beginning of 2009, I have been a general manager ... [Male general manager – *facts*]

PAIR 2: RESULTS VERSUS COACH-ORIENTED

In order to be successful in organisational settings and responding to needs, leaders will either use behaviours and orientations, in order to lead their followers towards delivering the highest level of performance (*results-oriented*), or collaborate and foster an individualized relationship with their followers in order to work together on reaching an agreed-upon destination (*coach-oriented*).

According to MacKenzie, Podsakoff, and Rich (2001) and Yukl (2002), coaching and mentoring tend to be viewed as more useful for leading employees because they are tailored to individual needs, especially among those who are expected to work in unfamiliar or new situations, as well as assume new responsibilities.

Results-based orientations, however, are regarded as involving more stable personality traits (Payne, Youngcourt, and Beaubien 2007), in which people tend to judge successful performance (Roberts, Treasure, and Conroy 2007).

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When we asked about leadership identity, leaders described their own identity when leading people. The purpose of this question was to determine whether the focus of leaders was on outcomes/goals or on coaching/mentoring; 65% of managers admitted that they implement a coaching style:

My role is as a coaching type of leader. I listen and try to allow the person to find out the answers. If needed, I give advice, brainstorm together and try to find solutions. [Female general manager – *coach*]

Meanwhile, 35% of managers acknowledged that they were more *results-* or *goal-focused*:

Somebody might say that I was a born leader, but it's more about a willingness to get things done. If I think that things are not proceeding, I really take the lead, I tend to get things done and get them running. [Male general manager – *results*]

PAIR 3: PROCEDURES VERSUS HUMAN RELATIONS

For evaluation purposes, in this paragraph, we use the term *process* for procedures and *people* for human relations. Process-focused leadership is a behavioural approach in which the leader focuses on the process that needs to be performed in order to meet certain goals, i.e., an adaptation of the task-focused leadership definition by Forsyth (2010). *People-focused* leadership is a behavioural approach in which the leader focuses on the satisfaction, motivation and general well-being of team members. The interviews and survey responses demonstrated that 80% of managers were more *people-focused*:

People will do their best when they know I care ... You really communicate with people, you inform them, follow-up, but you also really have to show that you care for them. [Male line manager – *people/human relations*]

I want to see the big picture, supporting people, developing trust, being empathetic, listening to people, understanding how team members feel. [Male director – *people/human relations*]

Listen to your people, your mind and heart, and always be honest ... I usually say that you have to always keep your ears and eyes open, observing, talking with your people. [Male director – *people/human relations*]

Meanwhile, 20% of managers admitted that they were more *process-focused*:

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I'm quite structured and would like my subordinates to be structured, by being somewhat punctual. [Male line manager – *process/procedures*]

I do not consider myself as a micro manager, but it's easier to lead an operational team. [Female general manager – *process/procedures*]

PAIR 4: INTROVERT VERSUS EXTROVERT

Allbeck and Badler (2008) explain that personality is a pattern of behaviour, which includes *introversion* and *extroversion*. Furthermore, in Western European or American culture, it is well documented, according to Zaccardi, Howard, and Schnusenberg (2012) that the perception of a successful leader is one with outgoing characteristics that is a charismatic extrovert. In other cultures, it is also well known that having an *extrovert* in a leadership role means there is a more evident connection to *people*, active engagement and enthusiasm than is observed from a reserved *introvert*.

However, a recent study conducted by Stephens-Craig, Kuofie, and Dool (2015) revealed that the majority of participants believed both introverts and extroverts could be successful leaders, while just a few participants were minded that only extroverts could be effective leaders. This finding is based on qualitative research involving 31 mid- to high-level leaders in a variety of occupations. In fact, regardless of the preference for introversion or extroversion, each individual is capable of learning and compensating for one's own weaknesses in order to adapt and operate in the corporate world, a world that may be designed for extroverts (Stephens-Craig, Kuofie, and Dool 2015). The interviews demonstrated that 25% of respondents were *introverts*:

My personality is introverted. I use up my energy if there is a lot of controversy and hassle. [Female director – *introvert*]

I prefer to work independently in my own office, a workplace that allows you to work innovatively. [Male line manager – *introvert*]

Meanwhile, 75% of respondents admitted that they were more *extroverted*:

I'm very extroverted. I would never be able to work on a long-term basis by myself, it would kill me. [Male director – *extrovert*]

I'm not afraid to listen and talk to different people ... I want

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to communicate with people, that's a sustainable approach. [Female general manager – *extrovert*]

PAIR 5: THE PAST VERSUS THE FUTURE

Future orientation, which is derived from Kluckhohn and Strodtbeck (1961), is the degree to which individuals in organisations engage in future behaviours, such as planning and investing in the future. Shenhar (1993) emphasizes that future-oriented behaviour reduces uncertainty. Furthermore, according to Ulrich, Zenger, and Smallwood (2013), the future is more important than the past because the working environment changes so quickly. Skip Prichard (2016), the CEO of Leadership Insight, argues that: 'It's always easier to stay where we are comfortable. But don't become an expert on the problem; become known as someone who drives to a better future. That's the essence of leadership.' That said, 70% of respondents indicated that they were more inclined towards the future, as indicated by the following examples:

I'm interested in the future; I'm interested in looking at different ways of doing things, interested in figuring out what happens if we do something this way or another way. [Male general manager – *future*]

Meanwhile, approximately 30% of respondents tended to think about the past:

You should ask younger leaders to share [what they know] because now I have just (x) years and (x) months until retirement. With the situation that the company has today, I wouldn't want to stay more than a day longer. [Male general manager – *past*]

PAIR 6: LAISSEZ-FAIRE VERSUS PROACTIVE

Generally speaking, the laissez-faire attitude (letting things take their own course, without interfering) usually leads to lower productivity compared to a proactive attitude. Wooden and Jamison (2009) insist that 'successful leadership is not about being tough or soft, sensitive or assertive, but about a set of attributes; first and foremost is character ... get ready to respond quickly and correctly; intensity makes you stronger.'

Wooden and Jamison (2009) emphasize that a leader must have the initiative and courage to make decisions, as well a willingness to risk failure. Meanwhile, laissez-faire leadership should not be confused with empowering management; nor should it be confused with

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democratic leadership behaviour (Frischer 1993). However, the narrative data below are more about the attitudes displayed in the context of leaders' career development behaviour than any leadership style. Surprisingly, the interviews revealed that 20% of respondents tended to have adopted a *laissez-faire* attitude:

I'm the kind of person who needs to get support from a superior. My boss encouraged me to apply for a position that I wouldn't have necessarily considered myself. [Female general manager – *laissez-faire*]

I've been pushed by managers, I've been lucky. My manager has been pushing me and got me moving forward, which is typical of my own professional career. Recently, changes and my manager forced me to take on a new role. [Female general manager – *laissez-faire*]

On the contrary, approximately 80% of managers claimed they were more *proactive*.

I am always proactive, motivating people and paying attention to each individual. [Male general manager – *proactive*]

I've done a lot of work on myself, investigated myself, my strengths and weaknesses, in order to develop myself all the time. [Female director – *proactive*]

I am always prepared and have a rough idea every week of what I need to do, how to better arrange my time and energy. [Male line manager – *proactive*]

PAIR 7: UNPLANNED CAREER VERSUS PLANNED CAREER

According to Wooden and Jamison (2009), any activity to produce real results must be organized and executed meticulously. In fact, anything that is achieved without effort is seldom worthwhile or long lasting. Furthermore, one essential element of leadership development is career planning. Surprisingly, 25% of respondents confessed that they had not planned for their career:

I have never had a plan to become anything, nor ever actively thought about my career. For me, it's all about learning, not about the career. [Male director – *unplanned career*]

I am not a career person. My career moves are more dependent on the moves in the organization. [Female general manager – *unplanned career*]

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TABLE 3 A Sample of Verbal Results

Factors	Participant				
	1	2	3	4	5
Facts	Moderately	Moderately	Slightly	Slightly	Moderately
Philosophy	Moderately	Moderately	Very	Very	Moderately
Results	Slightly	Slightly	Not at all	Moderately	Slightly
Coach	Very	Very	Extremely	Moderately	Very
Procedures	Slightly	Slightly	Not at all	Moderately	Slightly
Human relations	Very	Very	Extremely	Moderately	Very
Introvert	Slightly	Not at all	Slightly	Moderately	Slightly
Extrovert	Very	Extremely	Very	Moderately	Very
Past	Moderately	Moderately	Slightly	Extremely	Slightly
Future	Moderately	Moderately	Very	Not at all	Very
Laissez-faire	Moderately	Moderately	Not at all	Extremely	Not at all
Proactive	Moderately	Moderately	Extremely	Not at all	Extremely
Unplanned career	Extremely	Moderately	Not at all	Very	Not at all
Planned career	Not at all	Moderately	Extremely	Slightly	Extremely

Meanwhile, 75% of respondents admitted that they had intentionally put more focus on their leadership career.

I was prepared and ready to get a career, but started with an unclear situation. So, I created my own position and path, which has been leading me throughout my years in the company. Everything is possible and I can see openings. [Female general manager – *planned career*]

I have always had a personal career strategy, including in other perspectives, not just my working life. When I have a clear target, it is easier to aim at the ultimate goal. [Male general manager – *planned career*]

MEASUREMENT

We quantified each participant's behaviour by using a scale with five ratings: not at all, slightly, moderately, very and extremely. Table 3 present sample results for five participants (the entire results for all participants can be found in table 8).

Table 4 shows the same results, although the word rating was replaced with a quantitative rating: not at all = 0, slightly = 0.25, moderately = 0.5, very = 0.75 and extremely = 1.

According to Brown (2003), personality is an outline of behaviour, while attitude is both a decision-oriented and learned behaviour. When we refer to a person's attitudes, we are trying to explain his

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TABLE 4 A Numeric Sample of Results

Factors	Participant				
	1	2	3	4	5
Facts	0.50	0.50	0.25	0.25	0.50
Philosophy	0.50	0.50	0.75	0.75	0.50
Results	0.25	0.25	0.00	0.50	0.25
Coach	0.75	0.75	1.00	0.50	0.75
Procedures	0.25	0.25	0.00	0.50	0.25
Human relations	0.75	0.75	1.00	0.50	0.75
Introvert	0.25	0.00	0.25	0.50	0.25
Extrovert	0.75	1.00	0.75	0.50	0.75
Past	0.50	0.50	0.25	1.00	0.25
Future	0.50	0.50	0.75	0.00	0.75
Laissez-faire	0.50	0.50	0.00	1.00	0.00
Proactive	0.50	0.50	1.00	0.00	1.00
Unplanned career	1.00	0.50	0.00	0.75	0.00
Planned career	0.00	0.50	1.00	0.25	1.00

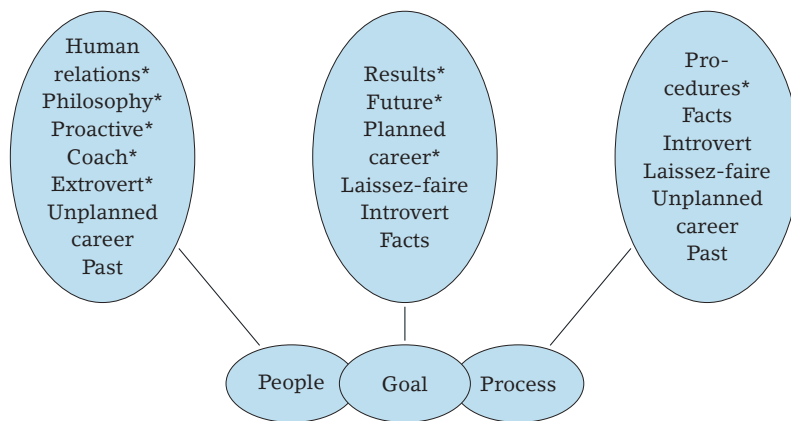


FIGURE 3 The Pattern of Leaders' Focus Areas

or her behaviour, which in turn helps us to define how we behave towards a situation or object. With this aspect in mind, and by individually and collectively examining the data set, we found that leaders' behaviours could be categorized into different attributes. Consequently, a pattern of *people-, process and goal-focused* behaviours was discovered. Figure 3 demonstrates the pattern of leaders' focus areas.

Large oval on the left contains five leading attributes: Human re-

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lations* (Hu), Philosophy* (Ph), Proactive* (Pro), Coach* (Co), and Extrovert* (Ex). In addition, it contains two sub- attributes or non-leading attributes: Unplanned career (Un_ca) and Past (Pa).

Large oval on the right contains one leading attribute: Procedure* (Proc). In addition, it contains five sub- attributes: Facts (Fa), Introvert (In), Past (Pa), Unplanned career (Un_ca), and Laissez-faire (LF).

Large oval in the middle contains three leading attributes: Results* (R), Future* (Fu), Planned career*, (Pl_ca) and three sub-attributes: Introvert (In), Facts (Fa), and Laissez-faire (LF).

All leading attributes are categorized into one of the focus areas (e.g. human relations belongs to *People*, results to *Goal* etc.). In addition, as the sub-attributes do not naturally belong to one of the two remaining focus areas, we decided to split them evenly. With this split, the sum of all attribute pairs equals to 1, which ensures the validity of the mathematical model. This split is visible in the mathematical formulas where the sub-attributes are always divided by 2.

Equation 1 was used to calculate *people-focused* leadership behaviour index, in which Ph = philosophy, Co = coach, Hu = human relations, Ex = extrovert, Pa = past, Pro = proactive, and Un_ca = unplanned career.

$$People_{focused} = \frac{Ph + Co + Hu + Ex + \frac{Pa}{2} + Pro + \frac{Un_ca}{2}}{7} \times 100. \quad (1)$$

Equation 2 was used to calculate *process-focused* leadership behaviour, in which Fa = facts, Proc = procedures, In = introvert, Pa = past, LF = laissez-faire, and Un_ca = unplanned career.

$$Process_{focused} = \frac{\frac{Fa}{2} + Proc + \frac{In}{2} + \frac{Pa}{2} + \frac{LF}{2} + \frac{Un_ca}{2}}{7} \times 100. \quad (2)$$

Equation 3 was used to calculating *goal-focused* leadership behaviour, in which Fa = facts, R = results, In = introvert, Fu = future, LF = laissez-faire, and Pl_ca = planned career.

$$Goal_{focused} = \frac{\frac{Fa}{2} + R + \frac{In}{2} + Fu + \frac{LF}{2} + Pl_ca}{7} \times 100. \quad (3)$$

$$People_{focused} + Process_{focused} + Goal_{focused} = 100. \quad (4)$$

Table 5 shows the results from the 20 participants.

Due to the high level of skewness between *people-focused* variables, we decided to use the median (the midpoint of a frequency distribution of observed values) to calculate the focus results for

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TABLE 5 Results from the 20 Participants

Particip.	People	Process	Goal
1	0.571	0.232	0.196
2	0.571	0.179	0.250
3	0.661	0.054	0.286
4	0.464	0.339	0.196
5	0.554	0.107	0.339
6	0.696	0.036	0.268
7	0.429	0.250	0.321
8	0.464	0.179	0.357
9	0.589	0.089	0.321
10	0.393	0.214	0.393
11	0.411	0.179	0.411
12	0.375	0.196	0.429
13	0.464	0.250	0.286
14	0.411	0.250	0.339
15	0.286	0.196	0.518
16	0.429	0.196	0.375
17	0.393	0.214	0.393
18	0.732	0.125	0.143
19	0.607	0.107	0.286
20	0.554	0.107	0.339

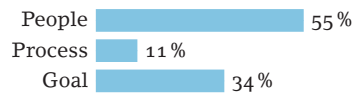


FIGURE 4 Key Focus Areas for Directors

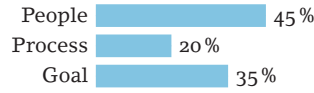


FIGURE 5 Key Focus Areas for General Managers

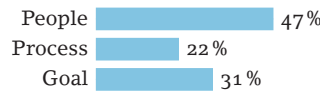


FIGURE 6 Key Focus Areas for Line Managers

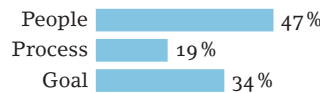


FIGURE 7 Key Focus Areas for all Participants

TABLE 6 Total Results

Position	People-focused	Process-focused	Goal-focused
Directors	55%	12%	33%
General managers	50%	17%	33%
Line managers	48%	21%	31%

each management level. Figure 4 presents the key focus areas for directors, figure 5 presents the key focus areas for general managers and figure 6 presents the key focus areas for Line Managers. Finally, figure 7 presents the total focus areas for all participants.

Discussion

This study presented an outline of behaviour (personality) and learned behaviour (attitude) as perceived and experienced by managers in a global company. We utilized a mixed methods approach to answer the research question: How is leadership behaviour manifested across organisational levels?

Table 6 presents the percentage of the total results for the three or-

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organisational levels. From a big picture perspective, the results show that the largest focus area for all three management team levels is *people* (Dir = 55%, GM = 50%, LM = 48%). The second largest focus area is *goal* (Dir = 33%, GM = 33%, LM = 31%), while the last focus area is *process* (Dir = 12%, GM = 17%, LM = 21%). The total results are displayed in table 6. Surprisingly, directors focus most of all on *people* (55%) and least of all on *process* (12%). As Harrington (2011, 122) emphasizes, 'the process is brought to life by people, our people make the process work, without them, we have nothing.' Furthermore, the *people-focused* results in this research are supported by the findings of Larsson and Vinberg (2010), who found that *people-oriented* leadership behaviour was by far the strongest in three-dimensional leadership behaviour theory (change, structure and people orientation).

The results also show that directors focus least on *process* compared with general and line managers (Dir = 12%, GM = 17%, LM = 21%), which could be regarded as both logical and understandable because directors probably focus more on the big picture compared to their subordinates. Furthermore, line managers inevitably focus more on *process* than general managers and directors, given that the former's subordinates typically perform operational tasks where processes are important.

Although *goals* or results are usually considered to be the final measure of success, the outcomes unexpectedly show an almost identical focus on *goals* across the three management levels (Dir = 33%, GM = 33%, LM = 31%), even though many researchers argue that *process* should be focused on more than *goals* (Wooden and Jamison 2009). Furthermore, business processes can help organisations vastly improve their effectiveness and the quality of their products and services (Harrington 2011).

Let us now look at the context of 'weak or strong position power' among the directors from a medium-sized company who participated in this study, where a director is typically below three other chief positions, namely, chief information officer, chief financial officer/chief digital officer and chief executive officer. This 'position power' aspect may have some influence on the focus of directors.

Table 7 presents the inter-correlation matrix of 14 variables. In general, the correlations were rather high between several variables, including between the 'human relations' and 'procedures' variables (0.91), or between the 'proactive' and 'future' variables (0.78). Conversely, the coefficient correlation between the 'planned career' and 'introvert' variables was very low (0.01). However, this low correla-

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TABLE 7 Inter-Correlation Matrix for Study Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1)	1												
(2)	-.534	1											
(3)	.534	-.534	1										
(4)	.534	.534	-.1	1									
(5)	.588	-.588	.913	-.913	1								
(6)	-.588	.588	-.913	.913	-.1	1							
(7)	.212	-.212	.468	-.468	.307	-.307	1						
(8)	-.212	.212	-.468	.468	-.307	.307	-.1	1					
(9)	-.043	.043	.126	-.126	.290	-.290	-.100	.100	1				
(10)	.043	-.043	-.126	.126	-.290	.290	.100	-.100	-.1	1			
(11)	-.139	.139	.179	-.179	.289	-.289	.104	-.104	.777	-.777	1		
(12)	.139	-.139	-.179	.179	-.289	.289	-.104	.104	-.777	.777	-.1	1	
(13)	-.248	.248	-.254	.254	-.182	.182	-.010	.010	.536	-.536	.660	-.660	1
(14)	.248	-.248	.254	-.254	.182	-.182	.010	-.010	-.536	.536	-.660	.660	-.1

NOTES Column/row headings are as follows: (1) facts, (2) philosophy, (3) results, (4) coach, (5) procedures, (6) human relations, (7) introvert, (8) extrovert, (9) past, (10) future, (11) laissez-faire, (12) proactive, (13) unplanned career, (14) planned career.



FIGURE 8 Optimal Key Focus Areas

tion is logical and understandable because these two variables are independent of each other.

To conclude, where a participant has seven pair factors of the same neutral weight (moderately = 0.5), applying this value to the Equations 1, 2 and 3 produces the following results: *people-focused* = 43%; *process-focused* = 25%; *goal-focused* = 32%. These percentages can be considered as the optimal values for people, process and goal modelling, if we exclude all potentially influencing factors on the results (such as gender, position power or the financial situation of the studied company). Figure 8 presents an optimal people, process and goal model.

THEORETICAL IMPLICATIONS

This study conveys several theoretical implications for leadership research. The first and major theoretical contribution is the proposed normative model. Our results reveal the existence of a pattern of leadership behaviour in three focus areas: *people*, *process* and *goal*. This pattern signifies the strategic choices made to ensure the organization’s long-term success.

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TABLE 8 Total Verbal Results

(1)	Facts	Philosophy	Results	Coach	Process	Human relations	Introvert
1	Moderately	Moderately	Slightly	Very	Slightly	Very	Slightly
2	Moderately	Moderately	Slightly	Very	Slightly	Very	Not at all
3	Slightly	Very	Not at all	Extremely	Not at all	Extremely	Slightly
4	Slightly	Very	Moderately	Moderately	Moderately	Moderately	Moderately
5	Moderately	Moderately	Slightly	Very	Slightly	Very	Slightly
6	Not at all	Extremely	Not at all	Extremely	Not at all	Extremely	Slightly
7	Moderately	Moderately	Moderately	Moderately	Moderately	Moderately	Moderately
8	Moderately	Moderately	Moderately	Moderately	Moderately	Moderately	Slightly
9	Moderately	Moderately	Slightly	Very	Slightly	Very	Not at all
10	Very	Slightly	Very	Slightly	Very	Slightly	Slightly
11	Moderately	Moderately	Very	Slightly	Very	Slightly	Not at all
12	Very	Slightly	Moderately	Moderately	Moderately	Moderately	Moderately
13	Very	Slightly	Slightly	Very	Moderately	Moderately	Slightly
14	Very	Slightly	Moderately	Moderately	Very	Slightly	Slightly
15	Very	Slightly	Very	Slightly	Moderately	Moderately	Extremely
16	Very	Slightly	Moderately	Moderately	Moderately	Moderately	Slightly
17	Very	Slightly	Moderately	Moderately	Moderately	Moderately	Very
18	Moderately	Moderately	Not at all	Extremely	Not at all	Extremely	Not at all
19	Moderately	Moderately	Slightly	Very	Slightly	Very	Not at all
20	Very	Slightly	Slightly	Very	Slightly	Very	Not at all
(1)	Extrovert	Past	Future	Laissez-faire	Proactive	Unplanned career	Planned career
1	Very	Moderately	Moderately	Moderately	Moderately	Extremely	Not at all
2	Extremely	Moderately	Moderately	Moderately	Moderately	Moderately	Moderately
3	Very	Slightly	Very	Not at all	Extremely	Not at all	Extremely
4	Moderately	Extremely	Not at all	Extremely	Not at all	Extremely	Not at all
5	Very	Slightly	Very	Not at all	Extremely	Not at all	Extremely
6	Very	Not at all	Extremely	Not at all	Extremely	Slightly	Very
7	Moderately	Moderately	Moderately	Moderately	Moderately	Moderately	Moderately
8	Very	Slightly	Very	Slightly	Very	Slightly	Very
9	Extremely	Slightly	Very	Not at all	Extremely	Not at all	Extremely
10	Very	Moderately	Moderately	Not at all	Extremely	Not at all	Extremely
11	Extremely	Slightly	Very	Slightly	Very	Not at all	Extremely
12	Moderately	Slightly	Very	Slightly	Very	Not at all	Extremely
13	Very	Moderately	Moderately	Moderately	Moderately	Moderately	Moderately
14	Very	Moderately	Moderately	Slightly	Very	Slightly	Very
15	Not at all	Not at all	Extremely	Not at all	Extremely	Not at all	Extremely
16	Very	Slightly	Very	Slightly	Very	Slightly	Very
17	Slightly	Slightly	Very	Not at all	Extremely	Slightly	Very
18	Extremely	Slightly	Very	Not at all	Extremely	Extremely	Not at all
19	Extremely	Moderately	Moderately	Not at all	Extremely	Not at all	Extremely
20	Extremely	Slightly	Very	Not at all	Extremely	Not at all	Extremely

NOTES (1) Participant.

Secondly, our study addresses calls for research on the link between the paths of people-, process- and goal-focused leadership behaviour that no prior researchers have considered. Finally, our finding provides a new insight into how leadership behaviour manifests differently across organisational levels.

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PRACTICAL IMPLICATIONS

The findings of this study contribute to managerial practices. Our results pinpoint the percentage of specific behaviours that leaders can follow to develop their leadership skills as well as to find the desired balance for their own organisational success. In addition, organisations can utilise the *People, Process and Goal* model for recruitment, selection or to find the right competent leaders to the right positions. Especially, the model can be used as a compass for leadership development programs to train leaders according to the vision and mission of the organisations. Finally, our findings provide a new instrument and methodology to measure the convergence of leadership behaviour, which will assist the organisation to achieve the greater success.

LIMITATIONS AND OPPORTUNITIES FOR FURTHER RESEARCH

The first limitation to consider is related to the features of the sample. We do not know whether these results would have been generalizable had the sample size been somewhat larger or more gender-balanced, or if the participants' nationalities had been those other than Northern European.

The second possible limitation is related to the time-dependent variables and conditions. It is unknown whether the results would have been the same had the data gathering process been conducted in another period, for example, when the financial situation of the company was significantly different. As Ha-Vikström and Takala (2016c), Jin, Seo, and Shapiro (2016), and Kazmi (2016) argue, when a company's financial status is low, this tends to negatively affect the atmosphere at work, as well as how leaders are perceived and behave. Therefore, further research involve a more diverse or balanced sample size, including within different organisational settings, such as the private sector versus the public sector, or for-profit organization versus non-profit organisations, in order to validate and verify the optimal values of the model.

Third, although our use of the triangulation of multiple sources, together with multidimensional levels of measurement and strong techniques, contribute to the confidence, credibility and trustworthiness of the results, an unavoidable shortcoming concerns the difficulty of replication. Hence, further studies should utilize the seven-factor pairs in a survey, possibly using the analytic hierarchy process tool, in order to determine the focus of leaders' behaviour.

Finally, this study has only considered how leadership behaviour

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is manifested across three management team levels, while excluding the measurement of the respective company's performance. Therefore, further research to explore the relationship between the people, process and goal model and organisational performance is recommended.

Conclusion

This research has interrogated the leadership behaviours, as perceived and experienced by managers in a global company, through a triangulation method that no one had previously connected. The results reveal a pattern of leaders' behaviour in three key focus areas for success: *people, process and goal*. This paper not only contributes to our understanding of how leadership behaviour manifests differently across organisational levels, but also provides an instrument and methodology for measuring the convergence of leadership behaviours. The *people, process and goal* model can be used to directly support leaders in leading and improving their leadership skills, as well as to focusing their development efforts on their own organisational success. In addition, the model can also be used as a compass for organisations when considering leadership training programs or for recruitment, selection or promotion purposes. Finally, this empirical research study on leadership behaviour has identified productive opportunities for further research in order to develop a more effective leadership behaviour model that is applicable to different types of organisations.

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Appendix 1: Interview Questions

1. *Please tell about your professional career story and significant career events.* The purpose of this question is that the interviewees in a free manner describe the significant or important career events that they have had during their leadership career. A kind of success in their life-history narratives.
2. *What has supported vs. what has prevented your development as a leader?* This question seeks to explore the interviewees existing significant career events, based on those events, what has supported

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them to develop their leadership career versus what has hindered their leadership development.

3. *Please describe your leadership identity or how you grow with your role as a leader.* The purpose of this question is to investigate the interviewees' leadership identity, how do they further leverage their leadership brand, and how do they fill in gaps for even greater leadership.
4. *What gives you energy for leadership activities vs. what takes energy away from you?* The aim of this question is that the interviewees describe the positive versus negative thoughts on leadership activities that support or hinder their leadership career.

Appendix 2: A Sample Excerpt from the Observations' Diary

- *Participant 9:* a talkative and outgoing skillful leader, who enjoys being the center of attention.
- *Participant 3:* a warm empathetic and harmonic leader, who used to please other people and tends to pay attention of his actions in relation to others.
- *Participant 15:* a facts and details leader who likes to describe things in a specific way and focuses on how things are, prefers ideas that have practical application.
- *Participant 7:* a punctual leader who prefers step-by-step instructions, likes to make plans and deadline is very important.
- *Participant 18:* a very spontaneous leader who enjoys new situation, loves changing and quite flexibility with rules and deadlines.
- *Participant 6:* a calm leader who prefer to discuss possibilities of how things could be done in different way and likes to notice the big picture.
- *Participant 4:* a taciturn reserved leader who rather observe than stay in the center of attention.
- *Participant 15:* a fairness leader who likes fast actions and can make decision in an impersonal way.

References

- Allbeck, J. M., and N. I. Badler. 2008. 'Creating Crowd Variation with the Ocean Personality Model.' Paper presented at the AAMAS 2008 conference, Estoril, 12–6 May.
- Anderson, D. E. 1974. 'Leadership Effectiveness in Education as Related to Congruence between Human Behavior Types and Leadership Styles.' PhD dissertation, Western Michigan University, Kalamazoo.
- Antonakis, J., and R. J. House. 2014. 'Instrumental Leadership: Measurement and Extension of Transformational-Transactional Leadership Theory.' *The Leadership Quarterly* 25:746–71.

People-, Process- and Goal-Focused Leadership Behaviour

- Anzalone, C. 2012. 'Differences between Task-Oriented Leaders & Relational-Oriented Leaders.' <http://smallbusiness.chron.com/differences-between-taskoriented-leaders-relationaloriented-leaders-35998.html>
- Bass, B., and B. Avolio. 1995. *MLQ Multifactor Leadership Questionnaire*. Redwood City, CA: Mind Garden.
- . 1997. *Full Range Leadership Development: Manual for the Multifactor Leadership Questionnaire*. Redwood City, CA: Mind Garden.
- Bass, B. 1967. 'Some Effects on a Group of Whether and When the Head Reveals His Opinion.' *Organizational Behavior and Human Performance* 2:375–82.
- Bass, B. M., 2000. 'The Future of Leadership in Learning Organizations.' *Journal of Leadership Studies* 7 (3): 18–40.
- Bass, B. M., and R. Bass. 2008. *The Bass Handbook of Leadership: Theory, Research, and Managerial Applications*. New York: Free Press.
- Bass, B. M., B. J. Avolio, D. I. Jung, and Y. Berson. 2003. 'Predicting Unit Performance by Assessing Transformational and Transactional Leadership.' *Journal of Applied Psychology* 88:207–18.
- Bass, B. M. 1990. *Bass & Stogdill's Handbook of Leadership: Theory, Research, and Managerial Applications*. 3rd ed. New York, NY: Free Press.
- Blake, R. R., and J. S. Mouton. 1964. *The Managerial Grid*. Houston, TX: Gulf.
- Bowers, D. G., and S. E. Seashore. 1966. 'Predicting Organizational Effectiveness with a Four Factor Theory of Leadership.' *Administrative Science Quarterly* 11:238–63.
- Brown, B. B. 2003. 'Employees' Organizational Commitment and Their Perception of Supervisors' Relations-Oriented and Task-Oriented Leadership Behaviors.' PhD Dissertation, Virginia Polytechnic Institute and State University, Blacksburg, VA.
- Cartwright, D. E., and A. E. Zander. 1960. *Group Dynamics*. Evanston, IL: Row, Peterson & Co.
- Conger, J. A. 2011. 'Charismatic Leadership.' In *The Sage Handbook of Leadership*, edited by A. Bryman, D. L. Collinson, K. Grint, B. Jackson, and M. Uhl-Bien, 86–102. Thousand Oaks, CA: Sage.
- Corbin, J., and A. Strauss. 2007. *Basics of Qualitative Research*. 3rd ed. Thousand Oaks, CA: Sage.
- De Jong, J. P., and D. N. Den Hartog. 2007. 'How Leaders Influence Employees' Innovative Behaviour.' *European Journal of Innovation Management* 10 (1): 41–64.
- Fiedler, F. E., and R. J. House. 1988. 'Leadership Theory and Research: A Report of Progress.' In *International Review of Industrial and Organizational Psychology*, edited by C. L. Cooper and I. Robertson, 73–92. New York: Wiley.

Thanh Ha-Vikström

- Fleishman, E. A. 1951. 'The Relationship between "Leadership Climate" and Supervisory Behavior.' PhD dissertation, Ohio State University, Columbus, OH.
- Fleishman, E. A. 1957. 'A Leader Behavior Description for Industry.' In *Leader Behavior: Its Description and Measurement*, edited by R. Stogdill and A. Coons, 10–119. Columbus, OH: Ohio State University.
- Fleishman, E. A. 1953a. 'The Description of Supervisory Behavior.' *Journal of Applied Psychology* 37 (1): 1–6.
- Fleishman, E. A. 1953b. 'The Measurement of Leadership Attitudes in Industry.' *Journal of Applied Psychology* 37 (3): 153–8.
- Forss, T. 2013. 'Improving Operational Performance within Social Housing.' PhD dissertation, University of Vaasa, Vaasa.
- Forsyth, D. R. 2010. *Group Dynamics*. 5th ed. Belmont, CA: Wadsworth Cengage Learning.
- Frischer, J. 1993. 'Empowering Management in New Product Development Units.' *Journal of Product Innovation Management* 10 (5): 393–401.
- Fullan, M. 2006. 'The Future of Educational Change: System Thinkers in Action.' *Journal of educational change* 7 (3): 113–22.
- Gold, R. L. 1958. 'Roles in Sociological Field Observations.' *Social Forces* 36 (3): 217–23.
- Griffin, R. J., and R. W. Ebert. 2010. *Business Essentials*. 8th ed. Upper Saddle River, NJ: Prentice Hall.
- Halpin, A. W. 1954. 'The Leadership Behavior and Combat Performance of Airplane Commanders.' *Journal of Abnormal and Social Psychology* 49 (1): 19–22.
- Harrington, H. J. 1991. 'Improving Business Processes.' *The TQM Magazine* 3 (1): 39–44.
- Harrington, H. J. 2011. *Streamlined Process Improvement*. New York: McGraw-Hill.
- Ha-Vikström, T., and J. Takala. 2016a. 'Knowledge Management and Analytical Modelling for Transformational Leadership Profiles in a Multinational Company.' In *Successes and Failures of Knowledge Management*, edited by J. Liebowitz, 151–74. Amsterdam: Elsevier.
- Ha-Vikström, T., and J. Takala. 2016b. 'Measuring Transformational Leadership Profiles: An empirical study across 21 nations in a multinational company.' *Theoretical Issues in Ergonomics Science*. <http://www.tandfonline.com/doi/abs/10.1080/1463922X.2016.1239780>
- Ha-Vikström, T., and J. Takala. 2016c. 'Do Cultures, Genders, Education, Working Experience or Financial Status Influence the Effectiveness of Transformational Leaders?' *Theoretical Issues in Ergonomics Science*. <http://www.tandfonline.com/doi/abs/10.1080/1463922X.2016.1243275>

People-, Process- and Goal-Focused Leadership Behaviour

- Hemphill, J. K., 1950. 'Relations between the Size of the Group and the Behavior of "superior" leaders.' *The Journal of Social Psychology* 32 (1): 11–22.
- Hill, L. A. 2003. *Becoming a Manager: How New Managers Master the Challenges of Leadership*. Boston, MA: Harvard Business Press.
- Hitt, M. A., P. W. Beamish, S. E. Jackson, and J. E. Mathieu. 2007. 'Building Theoretical and Empirical Bridges across Levels: Multilevel Research in Management.' *Academy of Management Journal* 50:1385–99.
- House, R. J. 1971. 'Path-Goal Theory of Leadership Effectiveness.' *Administrative Science Quarterly* 16 (3): 321–39.
- Indvik, J., and M. A. Fitzpatrick. 1986. 'Perceptions of Inclusion, Affiliation, and Control in Five Interpersonal Relationships.' *Communication Quarterly* 34 (1): 1–13.
- Jackson, B., and K. Parry. 2011. *A Very Short Fairly Interesting and Reasonably Cheap Book about Studying Leadership*. London: Sage.
- Jensen, M. C. 1978. 'Some Anomalous Evidence Regarding Market Efficiency.' *Journal of Financial Economics* 6 (2): 95–101.
- Johannsen, M. 2012. 'The Importance of Choosing the Right Leadership Style.' <https://www.legacee.com/types-of-leadership-styles/#.WQ3iwXJMRaQ>
- Katz, D., N. Maccoby, and N. C. Morse. 1950. *Productivity, Supervision, and Morale in an Office Situation*. Ann Arbor, MI: University of Michigan.
- Kluckhohn, F. R., and F. L. Strodtbeck. 1961. *Variations in Value Orientations*. Evanston, IL: Row and Peterson.
- Jin, S., Seo, M. G., and D. L. Shapiro. 2016. 'Do Happy Leaders Lead Better? Affective and Attitudinal Antecedents of Transformational Leadership.' *The Leadership Quarterly* 27 (1): 64–84.
- Kazmi, S. A. Z. 2016. 'Fusing Strategic Thinking and Transformational Leadership to Harness new Product Development Team Dynamics for Innovation.' PhD dissertation, University of Vaasa, Vaasa.
- Larsson, J., and S. Vinberg. 2010. 'Leadership Behaviour in Successful Organisations: Universal or Situation-Dependent?' *Total Quality Management* 21 (3): 317–34.
- Lincoln, Y. S., and E. G. Guba. 1985. *Naturalistic Inquiry*. Beverly Hills, CA: Sage.
- Lincoln, Y. S., S. A. Lynham, and E. G. Guba. 2011. 'Paradigmatic Controversies, Contradictions, and Emerging Confluences, Revisited.' *The Sage Handbook of Qualitative Research*, edited by N. K. Denzin and Y. S. Lincoln, 97–128. London: Sage.
- MacKenzie, S. B., P. M. Podsakoff, and G. A. Rich. 2001. 'Transformational and Transactional Leadership and Salesperson Performance.' *Journal of the Academy of Marketing Science* 29:115–34.

Thanh Ha-Vikström

- Maclean, M., C. Harvey, and R. Chia. 2012. 'Sensemaking, Storytelling and the Legitimization of Elite Business Careers.' *Human Relations* 65 (1): 17–40.
- Mann, F. C. 1965. 'Toward an Understanding of the Leadership Role in Formal Organizations.' In *Leadership and Productivity*, edited by R. Dublin, 68–103. San Francisco, CA: Chandler.
- Maxwell, J. A. 2012. *Qualitative Research Design: An Interactive Approach*. London: Sage.
- Merriam, S. B., and E. J. Tisdell. 2015. *Qualitative Research: A Guide to Design and Implementation*. Hoboken, NJ: Wiley.
- Miles, M. B., and A. M. Huberman. 1994. *Qualitative Data Analysis*. Thousand Oaks, CA: Sage.
- Mingers, J. 2001. 'Embodying Information Systems: The Contribution of Phenomenology.' *Information and Organization* 11 (2): 103–28.
- Misumi, J., and M. F. Peterson. 1985. *The Behavioral Science of Leadership: An Interdisciplinary Japanese Research Program*. Ann Arbor, MI: The University of Michigan Press.
- Ouchi, W. G., 1981. 'Organizational Paradigms: A Commentary on Japanese Management and Theory Z Organizations.' *Organizational Dynamics* 9 (4): 36–43.
- Padgett, D. K. 2016. *Qualitative Methods in Social Work Research*. London: Sage.
- Payne, S. C., S. S. Youngcourt, and J. M. Beaubien. 2007. 'A Meta-Analytic Examination of the Goal Orientation Nomological Net.' *Journal of Applied Psychology* 92 (1): 128–50.
- Podsakoff, P. M., S. B. MacKenzie, J. Y. Lee, and N. P. Podsakoff. 2003. 'Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies.' *Journal of Applied Psychology* 88 (5): 879–903.
- Prichard, S. 2016. '5 Ways to Stop Reviewing History and Create the Future.' <https://leadershipfreak.blog/2016/08/04/5-ways-to-stop-reviewing-history-and-create-the-future/>
- Rao, S. 2010. *Happiness at Work*. New York: McGraw-Hill.
- Reddin, W. J. 1977. 'An Integration of Leader-Behavior Typologies.' *Group & Organization Studies* 2 (3): 282–95.
- Roberts, G. C., D. C. Treasure, and D. E. Conroy. 2007. 'Understanding the Dynamics of Motivation in Sport and Physical Activity: An Achievement Goal Interpretation.' *Handbook of Sport Psychology*, 3rd ed., edited by G. Tenenbaum and R. C. Eklund, 1–30. Hoboken, NJ: Wiley.
- Saldaña, J. 2015. *The Coding Manual for Qualitative Researchers*. London: Sage.
- Seidman, I. 2013. *Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences*. New York: Teachers College Press.

People-, Process- and Goal-Focused Leadership Behaviour

- Shenhar, A. J. 1993. 'From Low- to High-Tech Project Management.' *R&D Management* 23 (3): 199–214.
- Stephens-Craig, D., M. Kuofie, and R. Dool. 2015. 'Perception of Introverted Leaders by Mid to High-Level Leaders.' *Journal of Marketing and Management* 6 (1): 62–75.
- Stogdill, R. M. 1963. *Manual for the Leader Behavior Description Questionnaire*. Columbus, OH: The Ohio State University.
- Strauss, A., and J. Corbin. 1998. *Basics of Qualitative Research Techniques*. London: Sage.
- Thurmond, V. A. 2001. 'The Point of Triangulation.' *Journal of Nursing Scholarship* 33 (3): 253–8.
- Ulrich, D., J. Zenger, and N. Smallwood. 2013. *Results-Based Leadership*. Boston, Massachusetts: Harvard Business School Press.
- Venkatesh, V., S. A. Brown, and H. Bala. 2013. 'Bridging the Qualitative-Quantitative Divide: Guidelines for Conducting Mixed Methods Research in Information Systems.' *MIS Quarterly* 37 (1): 21–54.
- Wooden, J., and S. Jamison. 2009. *Coach Wooden's Leadership Game Plan for Success: 12 Lessons for Extraordinary Performance and Personal Excellence*. New York: McGraw-Hill.
- Yukl, G. A. 2002. *Leadership in Organizations*. Upper Saddle River, NJ: Prentice Hall.
- Zaccardi, M., C. Howard, and O. Schnusenberg. 2012. 'Student Preparation and Personality Traits in the Job Market.' *Academy of Educational Leadership Journal* 16: 35–53.
- Zaleznik, A. 1977. 'Managers and Leaders: Are They Different?' *Harvard Business Review* 55 (3): 67–78.



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The People, Process and Goal Model vs. the Sand Cone Model of Transformational Leadership - A Critical Evaluation

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The aim of this paper is to compare and self-critically evaluate two leadership behaviour models, which are based on the findings of the authors' previous studies. These are the **sand cone model** of transformational leadership and the **people, process and goal model**. The results highlight the importance of leadership behaviour in both models. The elements incorporated in the sand cone model conceptualize and specify the effectiveness of transformational leadership behaviour, while different factors integrated into the people, process and goal model refer to the patterns of leaders' focus areas in real-life experiences. This paper contributes to the clarification of the values of these models and the justification for prioritizing one model over the other. Both models can help leaders in improving their skills and striking the desired balance in pursuit of their own reorganizational success. These empirical studies open up an avenue for further research on leadership behaviour models in different types of organization.

Keywords: leadership behaviour; sand cone model; people, process and goal model; transformational leadership.

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3. Introduction

It has been understood for a long time that leadership behaviours are major factors that influence employees' motivation and inform their work and other activities (Antonakis, Day and Schyns, 2012; Fischer, Dietz and Antonakis, 2016). Leadership behaviours activate the company resources in the fulfilment of the organization's mission. Leadership behaviours are also vital for organizational innovation, adaptation and performance (Antonakis and House, 2014). Leadership behaviours matter to teams, organizations and entire nations (Day and

Lord, 1988; House, Spangler and Woycke, 1991; Waldman and Yammarino, 1999; Flynn and Staw, 2004; Jones and Olken, 2005; Yukl, 2008; Crossan and Apaydin, 2010).

Based on our four previous investigations, this paper aims to compare and self-critically evaluate two leadership behaviour models: the **sand cone model** (SCM) of transformational leadership and the **people, process and goal model** (PPGM). The sand cone model was introduced and discussed in three peer-reviewed research articles (Ha-Vikström and Takala, 2016a, 2016b, 2016c), in which empirical data were collected via analytic hierarchy process-based surveys involving a global organization (with approximately 18,000 employees, located around the world). The survey was collected during two different periods in 2015 and 2016. In total, 112 mid-level managers participated.

The people, process and goal model was introduced in a recent peer-reviewed research article (Ha-Vikström, 2017), for which the empirical data were collected via surveys, in-depth interviews and observations with 20 managers across different organizational levels (directors, general managers and line managers) from the same aforementioned global organization during 2016.

The central focus of the sand cone model is to measure the effectiveness of leaders' performance from a transformational leadership perspective, while the central attention of the people, process and goal model is to measure the key focus areas of leadership in an organization in terms of people, processes and goals. For practical implications, these models and their assessing methods can be used for recruitment, selection or promotion purposes in any organization. These new theories provide ideas to develop training programmes to support leaders in order to take the organization to the highest level of performance.

This paper not only enhances our understanding of the importance of leadership behaviours and how they can be analysed and measured, but also contributes to the clarification of the values of the two models and the justification for prioritizing one model over the other.

The paper is structured as follows. Sections 1 and 2 describe the sand cone model and the people, process and goal model. Section 3 discusses the models' major differences and similarities. Section 4 introduces the benefits and limitations of the models, as well as how they could be combined or prioritized. Finally, Section 5 concludes with arguments about the findings and opportunities for further research.

2. Description of the sand cone model of transformational leadership

Transformational leadership theory has inevitably emerged as one of the most dominant leadership theories during the last three decades (Mhatre and Riggio, 2014). The baseline and purpose of transformational leadership are to inspire, encourage and motivate each other, to trust each other and to work together towards a common goal. In other words, transformational leadership describes how a leader seeks to meet the higher-order needs of followers (Banks et al., 2016).

Extensive reviews of the sand cone model of transformational leadership already exist (Takala et al., 2005; Takala, Hirvelä et al., 2006a, 2006b; Takala et al., 2008a; Takala et al., 2008b; Ha-Vikström and Takala, 2016a, 2016b, 2016c). Thus, in this section, we present a brief description of this model.

The structure of this model is supported by four main levels. The first and highest level is the “directions of outputs”. The next level concerns the “cornerstones” of transformational leadership followed by the “results” level. The “resources” are at the ground level of the model. Each component contains different elements. Takala et al. (2008a, 2008b) explain that *“each variable has been defined an optimal value, which should give the most balanced leadership. In theory, the optimal balanced leadership will be found when directions of outputs (each 33%), cornerstones (each 25%) and resources (each 25%)”* (Takala, 2013: 78). This distribution was defined according to the idealization theory and introduced as follows:

- The “**resources**” level is formed by four elements: processes (PC); people, technology and know-how (PT); information systems (IT); and organization groups and teams (OR). These four elements are built on the basis that, when new tasks are given in new situations or under new conditions, we first need people, technology and know-how, then processes, followed by organization, and finally an expansion of information system.
- The “**cornerstones**” level covers a group of three “I” elements/factors and building trust elements: intellectual stimulation (IS); individualized consideration (IC); inspirational motivation (IM); and building trust and confidence (BT). Jung and Avolio (1999), Bono and Judge (2003), and Judge and Piccolo (2004) have proposed these four factors as follows:

- Intellectual stimulation (IS) characterizes leaders' capacity to encourage his or her followers to think outside of the box, take risks and be innovative and creative.
 - Individualized consideration (IC) refers to leaders' ability to pay special attention to each individual follower's needs for achievement and growth.
 - Inspirational motivation (IM) describes those leaders who can provide a clear vision and encourage and set high standards for followers in the pursuit of future goals.
 - Building trust (BT) originates from the *idealized influence* concept from Bass and Steidlmeier (1999), which describes a role model leader for followers. The leaders and followers relationship is based on mutual trust and demands equality (e.g., Bass and Steidlmeier, 1999; Dirks and Ferrin, 2002; Judge and Piccolo, 2004; Bass and Riggio, 2006).
- The “**results**” level includes three styles of leadership: passive leadership, controlling leadership (Takala et al., 2006a, 2006b) and dynamic leadership (Ha-Vikström and Takala, 2016a, 2016b, 2016c), in which passive leadership and controlling leadership focus more on corrective actions and are thus the least effective (Bass and Riggio, 2006). In contrast, dynamic leadership is necessary because the world today is becoming more complex and dynamic. Dynamic times require dynamic, driven leaders (Williams, 1998) who can lead with courage, passion and vision (Duffy, 2006). Progen (2013) explains that dynamic leadership is dual-focused on both subordinates and the situation of leadership, enabling a leader to react to changes by being proactive. Dynamic leadership accepts diversity and helps leaders to be effective, as well as being a source of organizational creativity and innovation. Optimal balanced leadership can be found when there is 82% dynamic leadership equates, while controlling leadership and passive leadership are 9% each (Ha-Vikström and Takala, 2016a, 2016b, 2016c).
 - “**Direction of outputs**” incorporates three types of accomplishment: effectiveness (EF); satisfaction (SA); and extra effort (EE). These accomplishments are also the main foundation of the ‘prospector, analyser and defender model’, as invented by Takala, Kukkola and Pennanen (2008a). Extra effort (EE), or the ‘prospector’, is oriented towards the future and extra effort); effectiveness (EF), or the ‘defender’, is oriented towards current results and less effort for the future); and satisfaction (SA),

or the ‘analyser’, is oriented towards the prospector and the defender. Figure 1 is an example of the transformational leadership sand cone model with corresponding results. A list of traffic light values can be found in Appendix 1. Green is good, yellow should be improved and red should be avoided.

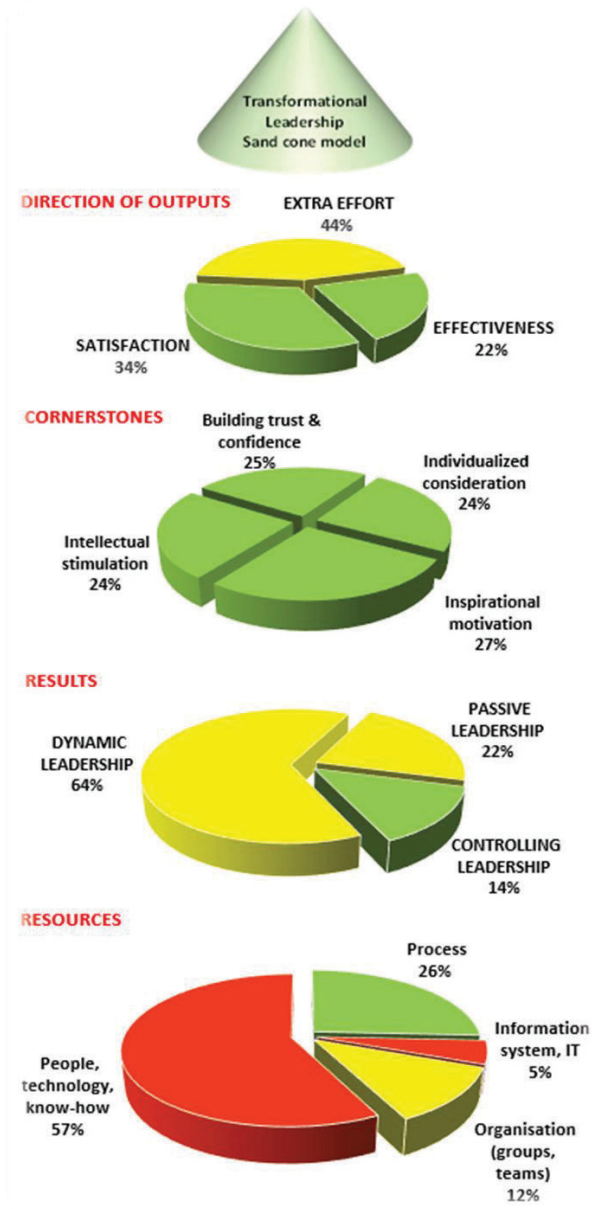


Figure 1. An example of a sand cone model of transformational leadership. (Ha-Vikström & Takala 2016)

2.1 Transformational leadership indexes

Five equations for calculating leadership indexes – total leadership index (TLI); specific index; outcomes index (OI); leadership index (LI); and resource index (RI) – in order to measure the effectiveness of leadership behaviour have been constructed and used in three previous studies (Ha-Vikström and Takala, 2016a, 2016b, 2016c).

$$TLI = 1 - \frac{\sum \text{absolute difference values}}{\sum \text{optimal values}} \quad (\text{Equation 1})$$

$$\text{Specific index} = 1 - \left(\frac{\text{absolute difference}}{\text{maximal difference}} \right) \quad (\text{Equation 2})$$

OI = outcomes index

$$OI = \text{mean} (\text{specific index} \{EF, SA, EE\}) \quad (\text{Equation 3})$$

LI = leadership index

$$LI = \text{mean} (\text{specific index} \{IC, IM, IS, BT, PL, CL, DL\}) \quad (\text{Equation 4})$$

RI = resource index

$$RI = \text{mean} (\text{specific index} \{PC, PT, IT, OR\}) \quad (\text{Equation 5})$$

Table 1 presents an example of how to calculate the TLI, specific index, OI, LI, RI and total transformational leadership index.

Table 1. An example of how to calculate TL indexes

TL components and factors	Optimal values	Response values	Absolute difference	TLI	Specific index	OI	LI	RI
Directions of outputs								
Effectiveness EF	33.33	12.20	21.13		0.68			
Satisfaction SA	33.33	32.00	1.33		0.98			
Extra Effort EE	33.33	55.80	22.47		0.66			
Cornerstones								
Individualized consideration IC	25.00	30.40	5.40		0.93			
Inspirational motivation IM	25.00	29.00	4.00		0.95			
Intellectual stimulation IS	25.00	20.30	4.70		0.94			
Building trust and confidence BT	25.00	20.30	4.70		0.94			
Results								
Passive leadership PL	9.00	26.00	17.00		0.81			
Controlling leadership CL	9.00	11.00	2.00		0.98			
Dynamic leadership DL	82.00	63.00	19.00		0.77			
Resources								
Process PC	25.00	13.40	11.60		0.85			
People, technology, know-how PT	25.00	48.40	23.40		0.69			
Information system IT	25.00	15.50	9.50		0.87			
Organisation (group, teams) OR	25.00	22.80	2.20		0.97			
Total	400.00		148.43	0.63		0.78	0.90	0.84

$$TLI = 1 - \frac{\sum \text{absolute difference values}}{\sum \text{optimal values}} = 1 - \frac{148.43}{400} = \mathbf{0.63}$$

$$\text{Specific index of EF} = 1 - \left(\frac{\text{absolute difference}}{\text{maximal difference}} \right) = 1 - \frac{21.3}{66.7} = \mathbf{0.68}$$

$$OI = \text{mean} (\text{specific index} \{EF, SA, EE\}) = \text{mean} (0.68, 0.98, 0.66) = \mathbf{0.78}$$

$$LI = \text{mean} (\text{specific index} \{IC, IM, IS, BT, PL, CL, DL\})$$

$$LI = \text{mean} (0.93, 0.95, 0.94, 0.94, 0.81, 0.98, 0.77) = \mathbf{0.90}$$

$$RI = \text{mean} (\text{specific index} \{PC, PT, IT, OR\}) = \text{mean} (11.6, 23.4, 9.5, 2.2) = \mathbf{0.84}$$

Table 2 presents the data analysis and intercorrelations between 14 factors and the transformational leadership index. The correlation coefficients can vary numerically between 0.0 and 1.0. The closer the correlation is to 1.0, the stronger the relationship between the two variables. In this table, there are several correlation coefficients that indicate the existence of a medium-to-strong relationship, for example: a) between the effectiveness EF variable and the extra effort EE variable (0.66); b) between extra effort EE and satisfaction SA (0.52); c) between dynamic leadership DL and passive leadership PL (0.85); and d) between controlling CL and passive leadership PL (0.50).

Table 2. Intercorrelation matrix for variables in the sand cone model

	IC	IM	IS	BT	PC	PT	IT	OR	EF	SA	EE	PL	CL	DL
Diff. IC	1.00													
Diff. IM	-0.40	1.00												
Diff. IS	-0.45	-0.05	1.00											
Diff. BT	-0.04	-0.54	-0.50	1.00										
Diff. PC	-0.03	-0.22	0.04	0.19	1.00									
Diff. PT	0.12	0.10	-0.23	0.02	-0.42	1.00								
Diff. IT	-0.13	0.12	0.06	-0.06	-0.38	-0.38	1.00							
Diff. OR	0.04	-0.04	0.20	-0.18	-0.10	-0.48	-0.19	1.00						
Diff. EF	-0.24	-0.02	0.21	0.03	0.03	-0.12	0.21	-0.11	1.00					
Diff. SA	0.12	-0.23	-0.16	0.26	-0.06	0.09	0.01	-0.07	-0.30	1.00				
Diff. EE	0.12	0.20	-0.06	-0.23	0.02	0.04	-0.19	0.16	-0.66	-0.52	1.00			
Diff. PL	0.20	-0.14	0.00	-0.04	0.12	-0.03	-0.12	0.03	0.07	0.04	-0.09	1.00		
Diff. CL	-0.05	0.03	0.06	-0.04	-0.13	-0.21	0.21	0.18	-0.07	0.04	0.03	-0.50	1.00	
Diff. DL	-0.20	0.14	-0.04	0.07	-0.07	0.15	0.01	-0.14	-0.03	-0.07	0.08	-0.85	-0.02	1.00
TL index	-0.16	-0.09	0.10	0.12	0.03	-0.43	0.28	0.24	0.08	0.27	-0.29	-0.48	0.26	0.40

Note: p < 0.05. Diff. IC = absolute difference in individualized consideration. All other abbreviations in this table can be found in the description of the sand cone model.

4. Description of the People, Process and Goal model

The people, process and goal model is a normative model of leadership behaviour, based on ideas that relate directly to organizational practice and the real-life experiences of leaders, rather than on any abstract hypotheses. The model describes leaders' focus areas across different organizational levels. An extensive review of this model has been presented in a recent empirical study (Ha-Vikström, 2017).



Figure 2. Essential focus areas of leadership behaviour (people use processes to achieve a goal)

Based on an investigation involving a triangulation approach, the findings reveal seven specific pairwise categories reflecting leaders' behaviour and their actual deeper meanings in real-life contexts (Ha-Vikström, 2017). Below is a succinct explanation of these seven pairwise categories:

Pair 1: Facts vs. philosophy

Here, the notion of *facts* refers to being a doer; most people work as 'doers' or contributors, with their primary responsibility being to perform tasks. Philosophy refers to being a thinker, preferring to seek a wider context, imagining different possibilities of how things should be done and considering why or how everything connects and so forth.

Pair 2: Results vs. coach-oriented

In a successful organizational setting, leaders may either use behaviours or orientations in order to lead their followers towards delivering the highest level of performance (*results-oriented*) or collaborate and foster an individualized relationship with their followers in order to work together on reaching an agreed-upon destination (*coach-oriented*).

Pair 3: Procedures vs. human relations

For evaluation purposes, we use the term procedures for process and human relations for people. *Process-focused* leadership is a behavioural approach in which the leader focuses on the process that needs to be performed. *People-focused* leadership is a behavioural approach in which the leader focuses on the satisfaction, motivation and general well-being of team members.

Pair 4: Introvert vs. extrovert

Introversion (reserved and solitary behaviour) and *extroversion* (talkative, outgoing and energetic behaviour) are personalities' patterns of behaviour. Stephens-Craig, Kuofie and Dool (2015) insist that, regardless of the preference for introversion or extroversion, each individual is capable of learning and compensating for one's own weaknesses in order to adapt and operate in the corporate world, a world that may be designed for extroverts.

Pair 5: The past vs. the future

"A past-oriented leader, for example, may need a future-oriented person working with him to create an organizational vision and to drive strategic planning. A future-oriented leader may need a past-oriented person working with her to review past performance data and analyse trends in data to be used in future planning" (Thoms, 2004: 45).

Pair 6: Laissez-faire vs. proactive

In general, the laissez-faire attitude (allowing things to take their own course, without interfering) usually leads to lower productivity compared to a proactive attitude (taking responsibility for one's role by engaging and cooperating with others, and always looking for ways to improve).

Pair 7: Unplanned career vs. planned career

An essential element of leadership development is career planning. Career planning used to be considered as the responsibility of a leader. The leader either does not plan his or her career for some reason, or attempts to explore and progress his or her potential career path through different activities and by setting personal development goals.

Based on these categories, each participant's behaviour (obtained through in-depth interviews, a questionnaire and observations) was quantified by using a scale with five ratings: not at all (0), slightly (0.25), moderately (0.5), very (0.75) and extremely (1).

According to Brown (2003), personality is an outline of behaviour, while attitude is both a decision-oriented and learned behaviour. When we refer to a person's attitudes, we are trying to explain his or her behaviour, which in turn helps us to define how we behave towards a situation or object. With this aspect in mind, and by individually and collectively examining the data set, we found that leaders' behaviours could be categorized into different attributes. Consequently, a pattern

of *people-, process- and goal-focused* behaviours was discovered. Figure 3 demonstrates the pattern of leaders' focus areas (Ha-Vikström, 2017).

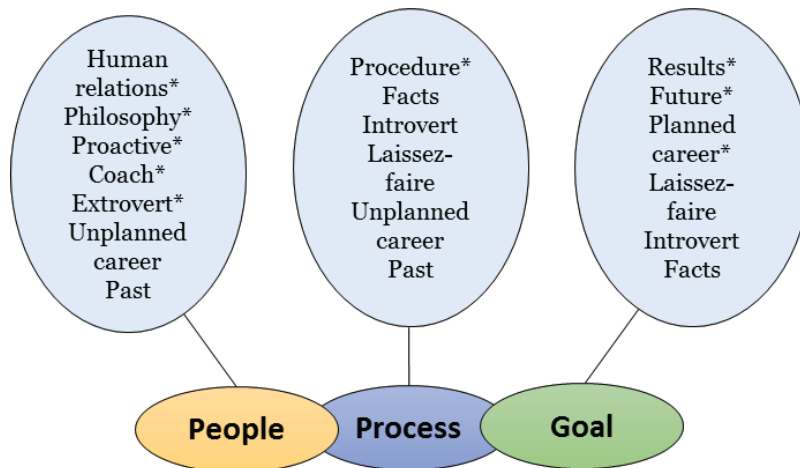


Figure 3. The pattern of leaders' focus areas

The large oval **on the left** contains five leading attributes: human relations* (Hu); philosophy* (Ph); proactive* (Pro); coach* (Co); and extrovert* (Ex). In addition, it contains two sub-attributes or non-leading attributes: unplanned career (Un_ca) and past (Pa).

The large oval **in the middle** contains one leading attribute, procedure* (Proc), and five sub-attributes: facts (Fa); introvert (In); past (Pa); unplanned career (Un_ca); and laissez-faire (LF).

The large oval **on the right** contains three leading attributes, results* (R), future* (Fu) and planned career* (Pl_ca), and three sub-attributes: introvert (In); facts (Fa); and laissez-faire (LF).

All leading attributes are categorized into one of the focus areas (e.g., the human relations attribute belongs to people, results to goal). As the sub-attributes did not naturally belong to one of the two remaining focus areas, we decided to split them evenly.

With this split, the sum of all attribute pairs equalled 1, thus ensuring the validity of the mathematical model. This split was visible in the mathematical formulas where the sub-attributes were always divided by 2. (Ha-Vikström, 2017).

Equation 1 was used to calculate the *people-focused* leadership behaviour index:

$$People_{focused} = \frac{\left(Ph + Co + Hu + Ex + \left(\frac{Pa}{2}\right) + Pro + \left(\frac{Un_ca}{2}\right) \right)}{7} \times 100 \quad (\text{Eq. 1})$$

Note: Ph = philosophy, Co = coach, Hu = human relations, Ex = extrovert, Pa = past, Pro = proactive and Un_ca = unplanned career.

Equation 2 was used to calculate the *process-focused* leadership behaviour index:

$$Process_{focused} = \frac{\left(\left(\frac{Fa}{2}\right) + Proc + \left(\frac{In}{2}\right) + \left(\frac{Pa}{2}\right) + \left(\frac{LF}{2}\right) + \left(\frac{Un_ca}{2}\right) \right)}{7} \times 100 \quad (\text{Eq. 2})$$

Note: Fa = facts, Proc = procedures, In = introvert, Pa = past, LF = laissez-faire and Un_ca = unplanned career.

Equation 3 was used to calculating the *goal-focused* leadership behaviour index:

$$Goal_{focused} = \frac{\left(\left(\frac{Fa}{2}\right) + R + \left(\frac{In}{2}\right) + Fu + \left(\frac{LF}{2}\right) + Pl_ca \right)}{7} \times 100 \quad (\text{Eq. 3})$$

Note: Fa = facts, R = results, In = introvert, Fu = future, LF = laissez-faire and Pl_ca = planned career.

$$People_{focused} + Process_{focused} + Goal_{focused} = 100 \quad (\text{Eq. 4})$$

Note: The sum index of the three focus areas is 100.

Let us consider an example of how to calculate the people focus, in which the received values from an informant, based on the triangulation analysis, are as follows: philosophy = 0.5, coach = 0.75, human relations = 0.75, extrovert = 0.75, past = 0.5, proactive = 0.5 and unplanned career = 1. If we apply these values to Equation 1, the people-focused index will be:

$$People_{focused} = \frac{\left(0.25 + 0.75 + 0.5 + 0.75 + \left(\frac{0.5}{2}\right) + 0.5 + \left(\frac{0.5}{2}\right) \right)}{7} \times 100$$

That is, people-focused equates to 47%.

By continuing in a similar manner with Equations 2 and 3 and by testing with Equation 4, we obtain the result illustrated in Figure 4.

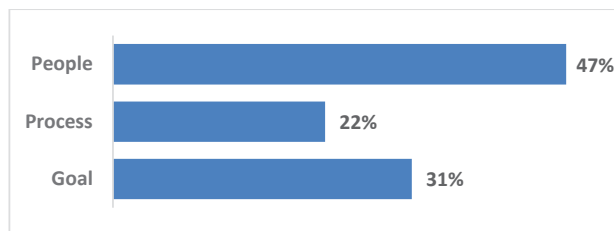


Figure 4. A sample of key focus areas for a leader

Table 3 presents the intercorrelation matrix of 14 variables of the people, process and goal model. As mentioned in the previous section, the correlation coefficients can vary numerically between 0.0 and 1.0. The closer the correlation is to 1.0, the stronger the relationship between the two variables. In this table, there are several correlation coefficients that indicate the existence of a medium-to-strong relationship, for example, between the “human relations” and “coach” variables (0.91), or between the “proactive” and “future” variables (0.78). Conversely, the coefficient correlation between the “planned career” and “introvert” variables was very low (0.01), but this is logical and understandable because these two variables are independent of each other.

Table 3. Intercorrelation matrix for variables in the PPGM

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Facts	1												
2 Philosophy	-1	1											
3 Results	0.534	-0.534	1										
4 Coach	-0.534	0.534	-1	1									
5 Procedures	0.588	-0.588	0.913	-0.913	1								
6 Human relations	-0.588	0.588	-0.913	0.913	-1	1							
7 Introvert	0.212	-0.212	0.468	-0.468	0.307	-0.307	1						
8 Extrovert	-0.212	0.212	-0.468	0.468	-0.307	0.307	-1	1					
9 History	-0.043	0.043	0.126	-0.126	0.290	-0.290	-0.100	0.100	1				
10 Future	0.043	-0.043	-0.126	0.126	-0.290	0.290	0.100	-0.100	-1	1			
11 Laissez-faire	-0.139	0.139	0.179	-0.179	0.289	-0.289	0.104	-0.104	0.777	-0.777	1		
12 Proactive	0.139	-0.139	-0.179	0.179	-0.289	0.289	-0.104	0.104	-0.777	0.777	-1	1	
13 Unplanned career	-0.248	0.248	-0.254	0.254	-0.182	0.182	-0.010	0.010	0.536	-0.536	0.660	-0.660	1
14 Planned career	0.248	-0.248	0.254	-0.254	0.182	-0.182	0.010	-0.010	-0.536	0.536	-0.660	0.660	-1

Note: $p < 0.05$

5. Comparative evaluation

This study is motivated by the following research questions (R1 and R2, respectively):

- What are the major differences and similarities between the sand cone model of transformational leadership and the people, process and goal model?

- What are the major benefits and limitations of these models, and how could the models be combined or prioritized?

R1. What are the major differences and similarities between the sand cone model of transformational leadership and the people, process and goal model?

The major similarity between the sand cone model and the people, process and goal model is that they are both analytical and normative models. They are also aligned with organizational interests because the models can be taken as guidelines for leaders to follow and improve their leadership skills, while both models can be utilized as a compass for organizations when considering leadership training programmes. Finally, they can also be applied to recruitment, selection or promotion activities.

There are three main points that highlight the connection between the sand cone model and the people, process and goal model. **Firstly**, *people-focused* leadership behaviour has a direct relation to all elements included in the sand cone model, because its four components (resources, results, cornerstones and direction of outputs) are always more or less focused on people. **Secondly**, *process-focused* behaviour has a connection to three of the aforementioned components: a) resources, because this component contains the process factor; b) results; and c) direction of outputs, as different styles and performances involve processes. **Thirdly**, *goal-focused* behaviour relates to the a) direction of outputs and b) results components of the *sand cone* model. Appendix 2 describes the connection between the two models.

The differences between the *sand cone* model and the people, process and goal model are:

- The purpose of the sand cone model is to measure the effectiveness of transformational leadership behaviours, while the aim of the people, process and goal model is to measure the focus of leadership behaviours.
- The measurement of the sand cone model involves reflecting the present situation, because the method used with this model, the analytic hierarchy process-based questionnaire, measures what leaders' behaviour and attitude are right now or in the current situation. In contrast, the measurement of the people, process and goal model reflects future focus, because the aim is to investigate leaders' behaviour in the long-term, for example, planned or unplanned careers, human relations and being proactive.

- The sand cone model uses an analytic hierarchy process-based survey, whereas the people, process and goal model is based on a survey, in-depth interviews and observations.
- The measuring method for the sand cone model is mainly quantitative, while the measuring method for the people, process and goal model is both qualitative and quantitative.
- Unlike the sand cone model, which uses five measurements or five formulas to calculate different indexes for leadership behaviours, the people, process and goal model uses three equations to calculate leaders' focus areas, reflecting their real-life experiences.
- Finally, the sand cone model has a clear optimal target, with index 0 being the worst and index 1 being the best. The common traffic light colour in the sand cone model is a clear indicator for leaders to follow. In contrast, the people, process and goal model has flexible targets according to organizational types (non-profit vs. profit organization), e.g. people-focused behaviour in a private company may not be the same as the people-focused behaviour in a public hospital.

Figure 4 presents the differences and similarities between the sand cone and people, process and goal models.

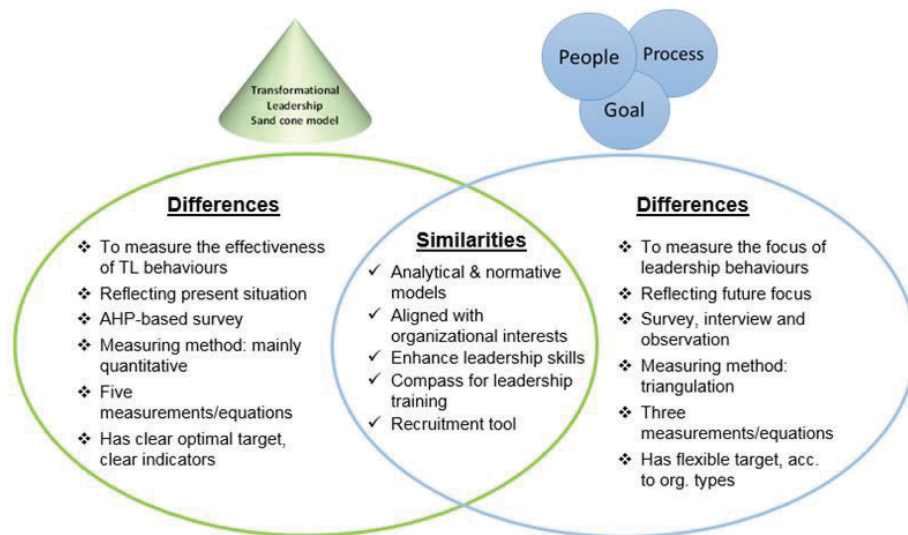


Figure 5. Differences and similarities between the SCM and PPGM

R2. What are the major benefits and limitations of these models?

By using these models, leaders can make themselves more aware of their own competences and opportunities. Subsequently, leaders are able to improve their leadership skills, such that skilful leaders have better prospects to retain their key followers. As these models are practical, organizations can use them as a compass for leadership training programmes, as well as a recruitment tool for selection or promotion purposes. These models can be cost-effective ways of developing people because they will positively impact employees' performance and productivity. At the same time, they will ensure employee satisfaction and motivation. Consequently, they can support succession planning for the company, as well as ensure organizational success. Table 1 below briefly presents the major benefits and limitations of the sand cone model and the people, process and goal model.

Table 4. Major benefits and limitations

	Benefits	Limitations
Sand cone model An analytical model to measure the effectiveness of transformational leaders	The model offers a leadership index and a profile as a guideline for leaders to follow	Expertise is needed to interpret the leadership profile The structure of the model seems to be less rational due to the use of ambiguous terminologies, e.g., “results” and “direction of outputs”, and may be less robust because of a weak correlation between these two components
	Can be used as a compass for leadership development training programmes	
	Can be used for recruitment, selection or promotion purposes	
	Contributes to our understanding of how internal and external factors impact leadership effectiveness	
	A cost-effective way of developing people to ensure organizational success	
People, process and goal model A normative model to measure the key focus areas of leadership behaviour	The model offers diagnostic feedback on leaders’ key focus areas	This model is constructed based on a single-case study The attributes in the model are a blend of different categories (the attributes are defined based on the patterns in the interviews, survey and observational data)
	Can be used as a compass for leadership development training programmes	
	Can be used for recruitment, or selection, or to match the right competent leaders to the right positions	
	Contributes to our understanding of how leadership behaviour manifests across organizational levels	
	A cost-effective way of developing people to sustain organizational success	
	The model opens up avenues for further research on leadership behaviour	

It is worth noting that the questionnaire is based on the analytic hierarchy process principle which increases the reliability and value of the sand cone model. Furthermore, the results from this measuring method involving a large number of participants (see Ha-Vikström and Takala, 2016b, 2016c) may make an important contribution to our understanding of how cultures, genders, education, working experience or financial status might influence the effectiveness of transformational

leaders. These key factors can help organizations to be proactive in developing their strengths and overcoming their weaknesses, for example, in terms of how to utilize the best resources or experience/knowledge from senior leaders.

Alternatively, the people, process and goal model represents a unique aspect of leadership behaviour with specific consequences in three key focus areas for achieving organizational success: people, process and goal. This instrument and methodology for measuring the convergence of leadership behaviours will help businesses and organizations to build consensus around common goals and ultimately achieve greater success.

4.1 Self-critical evaluation

The strength of the original sand cone model is emphasized by the fact that many researchers have studied and developed it since 2005 (Takala, Hirvelä, Hiippala and Nissinen, 2005, 2006; Takala, Pennanen, Hiippala, Maunuksela and Kilpiö, 2008; Takala, Kukkola and Pennanen, 2008b; Takala, Maunuksela, Pennanen, Rintamäki and Kukkola, 2010; Kazmi and Takala, 2012). In a recent study by Ha-Vikström and Takala (2016a, 2016b, 2016c), which sought to re-examine the model in a global business environment, some discrepancies were found in the transformational leadership index formulas. The model was improved with five new equations to provide accurate assessments to leaders and a new comprehensive layout for the leadership profile. The improved sand cone model now has clear targets and clear indicators (compared with the old one), which means all indexes are normalized into a range between 0.00 and 1.00 (index 1.00 is the best and index 0.00 is the worst). In other words, the higher the index a leader obtains, the greater the essentiality of leadership effectiveness.

Despite several improvements have been made to the sand cone model, expertise is needed to interpret all details within a leadership profile in order to provide “*a clear diagnostic comment to the leaders or coaching them to create a specific individual development plan*” (Kang and Jin, 2015). This is because two components (results and direction of outputs) in the sand cone model are, to some extent, ambiguous, as the term “results” can be interpreted in a similar way to “direction of outputs”; thus, as these two terms may not provide a decisive description, they may confuse a leader.

In addition, it may not be easy for a leader to understand the distinction between several elements in the model, for example, between the two elements “people, technology and know-how” and “organization (groups, teams)” in the “resources” component, given that, to some extent, both elements refer to people. In particular,

the logical connection between the “cornerstones” component and the “direction of output”, as well as the defined optimal value for each element in the model, seems to be far from explicit. Thus, these limitations may make the structure of the sand cone model less rational and solid.

Regarding the people, process and goal model, despite the fact that the three focus areas are apparent and easy to understand (people, process and goal), some guidelines and recommendations from the top or higher level of management teams about the healthiest balance for their own organizations are still needed. Admittedly, the biggest shortcoming of the people, process and goal model could be the attributes patterned into the model, such that one could ask why the attributes are a combination of different categories (coach vs. results; facts vs. philosophy, introvert vs. extrovert etc.). The answer is that the model describes the behaviour and attitude experienced by leaders across different organizational levels. These attributes are the findings based on in-depth interviews, a survey and observations conducted in a global business organization.

Furthermore, as mentioned in Table 5, another limitation that needs to be acknowledged is that the people, process and goal model was constructed, based on a single-case study (Ha-Vikström, 2017). However, this limitation opens up an avenue for further research. Our first recommendation is to conduct quantitative and/or qualitative research on this model in different organizational settings, for example, for-profit organizations vs. non-profit organizations or the private sector vs. the public sector, in order to validate and verify the model. Secondly, as the people, process and goal model only measures the focus areas of leaders (regardless of leadership styles), it does not concentrate on the healthiest balance for different types of organization. Thus, further research would be needed to explore the relation between this model and organizational performance.

A third suggestion for further research is to conduct more quantitative research on the sand cone model in multiple-case studies in order to fine-tune the model. Finally, further research to explore the relation between the people, process and goal model and organizational transformational leadership performance is also recommended.

4.2 How could the models be combined or prioritized?

As may be expected, these two models extend the theories of leadership behaviours. The sand cone model is used in the pursuit of short-term prospects, as it describes how leaders behave at present. Conversely, the people, process and goal model is used in the pursuit of long-term opportunities, by concentrating

more on how leaders transform their behaviour and attitude towards their followers. Based on these differences, each leader is recommended to utilize the sand cone model in order to enhance their leadership skills, while higher-level management teams are recommended to use the people, process and goal model in order to form or define the healthiest balance for their own organization.

This implies that our studies on the two models have been developed independently for partially different purposes. One model concentrates on the effectiveness of transformational leadership behaviour, while the other pays attention to leaders' focus areas across different organizational levels, regardless of leadership styles involved. Therefore, this study suggests that every organization should apply each model's strengths to its own situation, in the same way a golfer chooses his or her club, in order to maximize organizational effectiveness and success.

6. Conclusion

Poor leaders create dissatisfaction; conversely, great leaders make a significant difference in terms of organizational success (Culp and Smith, 2005; Prinsloo, 2012; Kang and Jin, 2015). But, without any helpful measurement tool, how can we distinguish between great leaders and poor leaders?

This study offers a critical evaluation of two practical tools that can help leaders to improve their leadership skills and strike the desired balance in order to meet their own organization's target. These models and their assessing methods can also be used for recruitment, selection or promotion purposes for any organization. The major theoretical contribution of this study is the clarification of the values of these two models and the justification for prioritizing one model over the other.

On the whole, these two models offer a novel perspective on how leadership behaviour can be measured and analysed by scholars and practitioners. Top executives should strategically apply each model's strengths to their own situation, in order to meet the challenges of today's turbulent and uncertain environment, as well as achieve and sustain organizational success.

References

- Antonakis, J., and R. J. House. 2014. 'Instrumental leadership: Measurement and extension of transformational–transactional leadership theory.' *The Leadership Quarterly* 25: 746-771.
- Antonakis, J., D.V. Day, and B. Schyns. 2012. 'Leadership and individual differences: At the cusp of a renaissance.' *Leadership Quarterly* 23: 643–650.
- Banks, G. C., K. D. McCauley, W. L. Gardner, and C. E. Guler, 2016. 'A meta-analytic review of authentic and transformational leadership: A test for redundancy.' *The Leadership Quarterly* 27 (4): 537–712.
- Bass, B., and P. Steidlmeier. 1999. 'Ethics, Character, and Authentic Transformational Leadership Behaviour.' *The Leadership Quarterly* 10 (2): 181–217.
- Bass, B., and R. Riggio. 2006. *Transformational Leadership*. 2nd ed. Mahwah, NJ: Lawrence Erlbaum Associates.
- Bono, J., and T. Judge. 2003. 'Self-Concordance at Work: Toward Understanding The Motivational Effects of Transformational Leaders.' *Academy of Management Journal* 46: 554–571.
- Brown, B. B. 2003. 'Employees' Organizational Commitment and Their Perception of Supervisors' Relations-Oriented and Task-Oriented Leadership Behaviors.' PhD Dissertation, Virginia Polytechnic Institute and State University, Blacksburg, va.
- Crossan, M. M., and M. Apaydin. 2010. 'A Multi-Dimensional Framework of Organizational Innovation: A Systematic Review of the Literature.' *Journal of Management Studies* 47 (6): 1154-1191.
- Culp, G., and A. Smith. 2005. 'Leadership Effectiveness and Behavior.' *Leadership & Management in Engineering* 5 (2): 39-48.
- Day, D. V., and R. G. Lord. 1988. 'Executive leadership and organizational performance: Suggestions for a new theory and methodology'. *Journal of Management* 14: 453-46.
- Dirks, K., and D. Ferrin. 2002. 'Trust in Leadership: Meta-Analytic Findings and Implications for Research and Practice.' *Journal of Applied Psychology* 87 (4): 611–628.
- Duffy, F. 2006. *Power, Politics, and Ethics in School Districts: Dynamic Leadership for Systemic Change, Leading Systemic School Improvement*. Lanham, MD: Rowman & Littlefield Publishing Group. ISBN-13: 978-1578863181.
- Fischer, T., J. Dietz, and J. Antonakis. 2016. 'Leadership process model: A review and synthesis.' *Journal of Management*, <http://dx.doi.org/10.1177/0149206316682830>.

Flynn, F.J., and B. M. Staw. 2004. 'Lend me your wallets: the effects of charismatic leadership on external support for an organization.' *Strategic Management Journal* 25 (4): 309-330.

Frischer, J. 1993. 'Empowering Management in New Product Development Units.' *Journal of Product Innovation Management* 10 (5): 393-401.

Ha-Vikström 2017. 'People-, process- and goal-focused leadership behaviour: an empirical study in a global company'. <http://www.hippocampus.si/ISSN/1854-4231/12.75-103.pdf> *Management journal*. 2(1): 1854-4231. DOI: 10.26493/1854-4231.12.75-103.

Ha-Vikström, T., and J. Takala. 2016a. Knowledge Management and Analytical Modelling for Transformational Leadership Profiles in a Multinational Company. In *Successes and Failures of Knowledge Management*, edited by J. Liebowitz, 151-174. Cambridge: Elsevier.

Ha-Vikström, T., and J. Takala. 2016b. 'Measuring transformational leadership profiles – An empirical study across 21 nations in a multinational company.' *Theoretical issues in ergonomics science*, <http://www.tandfonline.com/doi/abs/10.1080/1463922X.2016.1239780>

Ha-Vikström, T., and J. Takala. 2016c. 'Do cultures, genders, education, working experience or financial status influence the effectiveness of transformational leaders?'. *Theoretical issues in ergonomics science* <http://www.tandfonline.com/doi/abs/10.1080/1463922X.2016.1243275?needAccess=true&journalCode=ttie20>

House, R. J., W. D. Spangler, and J. Woycke. 1991. 'Personality and charisma in the U.S. presidency: A psychological theory of leader effectiveness.' *Administrative Science Quarterly* 36: 364- 396.

Jones, B. F., and B. A. Olken. 2004. 'Do Leaders Matter? National Leadership and Growth since World War II, *Northwestern University and Harvard University - Society of Fellows*. 2004.

Judge, T. A., and R. F. Piccolo. 2004. 'Transformational and transactional leadership: A meta-analytic test of their relative validity.' *Journal of Applied Psychology* 89: 755-768. <http://dx.doi.org/10.1037/0021-9010.89.5.755>.

Kang, S. K., and S. Jin. 2015. 'What are the best practices to assess leadership effectiveness?' Retrieved 01.06.2017 from Cornell University, ILR School site: <http://digitalcommons.ilr.cornell.edu/student/72>

Kazmi, A. and Takala, J. 2012. 'Individual Differences' in work-force substantiate greater levels of Operational responsiveness through 'Transformational Leadership'. Conference: International Conference on Business Strategy and Organizational Behaviour. Singapore. doi:10.5176/2251-1970_BizStartegy38, pp 50-55

Kirkpatrick, S., and E. Locke. 1996. 'Direct and Indirect Effects of Three Core Charismatic Leadership Components on Performance and Attitudes.' *Journal of Applied Psychology* 81: 36–51.

Cluckhohn, F. R., and F. L. Strodtbeck. 1961. *Variations in Value Orientations*. Evanston, il: Row and Peterson.

Mhatre, K. H., and R. E. Riggio. 2014. *Charismatic and transformational leadership: Past, present, and future*. The Oxford Handbook of Leadership and Organizations, 221–240.

Prinsloo, M. 2012. 'Towards an Integrated Assessment of Leadership Potent.' *Leadership Review* 12 (1): 1-31.

Ragin, C. 1987. *The comparative method: Moving beyond qualitative and quantitative methods*. Berkeley: University of California.

Stephens-Craig, D., M. Kuofie, and R. Dool. 2015. 'Perception of Introverted Leaders by Mid to High-Level Leaders.' *Journal of Marketing and Management* 6 (1): 62–75.

Takala, J., A. Kukkola, and J. Pennanen. 2008a. 'Prospector, Analyzer and Defender Models in Directions of Outcome in Transformational Leadership.' Paper presented at the 17th International Conference on the Israel Society for Quality, ISAS, Jerusalem, November 18–20. The 10th Management International Conference, MIC 2009 Sousse, Tunis, November 25–28.

Takala, J., H. Hirvela, P. Hiippala, and V. Nissinen. 2005. "Management and Deep Leadership Sand Cone model for Human Resource Allocation, The First Phase of the Study." Paper presented at the Fourth International Automation and Manufacturing Conference, ATDC (Advanced Technologies for Developing Countries), Slavonski Brod, Croatia, September 21–24.

Takala, J., H. Hirvela, P. Hiippala, and V. Nissinen. 2006a. "Management and Deep Leadership Sand Cone Model for Human Resource Allocation, The Second Phase of the Study." Paper presented at the Eleventh International Conference on Productivity and Quality Research, ICPQR. December 12–15. New Delhi, India. International Conference on Multinational Enterprises Multinational Enterprise in the Global Economy, March 14–16, 2006, Taipei, Taiwan.

Takala, J., J. Leskinen, H. Sivusuo, J. Hirvelä, and T. Kekäle. 2006b. 'The Sand Cone Model: Illustrating Multi-Focused Strategies.' *Management Decision* 44 (3): 335–345

Takala, J., J. Pennanen, P. Hiippala, A. Maunuksela, and O. Kilpiö. 2008b. 'Decision Maker's Outcome as a Function of Transformational Leadership.' In *Simplify Leadership and Coaching Effectiveness*, edited by T. Kinnunen, 67–86. Lahti, Deep Lead Oy, Aldus Oy.

Thoms, P. 2004. *Driven by time: Time Orientation and Leadership*. Praeger Publishers. Westport. Connecticut. London.

Ulrich, D., J. Zenger, and N. Smallwood. 2013. *Results-Based Leadership*. Boston, Massachusetts: Harvard Business School Press.

Waldman, D. A., and F. J. Yammarino. 1999. 'CEO charismatic leadership: Levels-of-management and levels-of-analysis effects.' *Academy of Management Review* 24: 266–285.

Wooden, J., and S. Jamison. 2009. *Coach Wooden's Leadership Game Plan for Success: 12 Lessons for Extraordinary Performance and Personal Excellence*. New York: McGraw-Hill.

Yukl G 2008. *Leadership in organizations*. New Jersey: Pearson Education, Inc.

Appendix 1. Traffic light values for the SCM of transformational leadership

Directions of outputs/optimal 33%

50–100 (red)

40–50 (yellow)

(20–40 (green)

10–(20 (yellow)

0–10 (red)

Cornerstones/optimal 25%

40–100 (red)

30–40 (yellow)

(20–30 (green)

10–(20 (yellow)

0–10 (red)

Dynamic Leadership/optimal 82%

70–100 (green)

50–70 (yellow)

0–50 (red)

Controlling and passive leadership/optimal 9%

25–100 (red)

15–25 (yellow)

0–15 (green)

Resources/optimal 25%

40–100 (red)

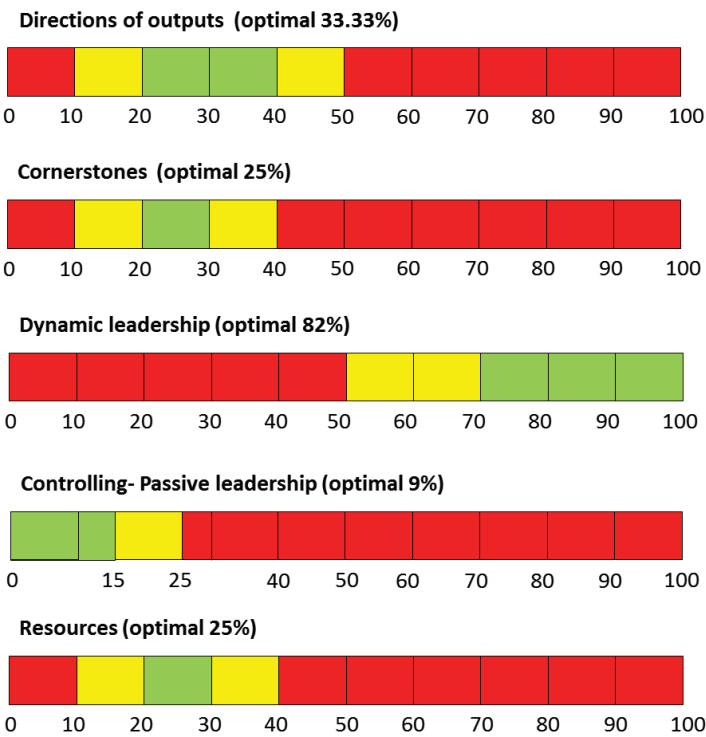
30–40 (yellow)

20–30 (green)

10–20 (yellow)

0–10 (red)

Table 5. An illustration of appendix 1



Appendix 2. The connection between the PPGM and the SCM

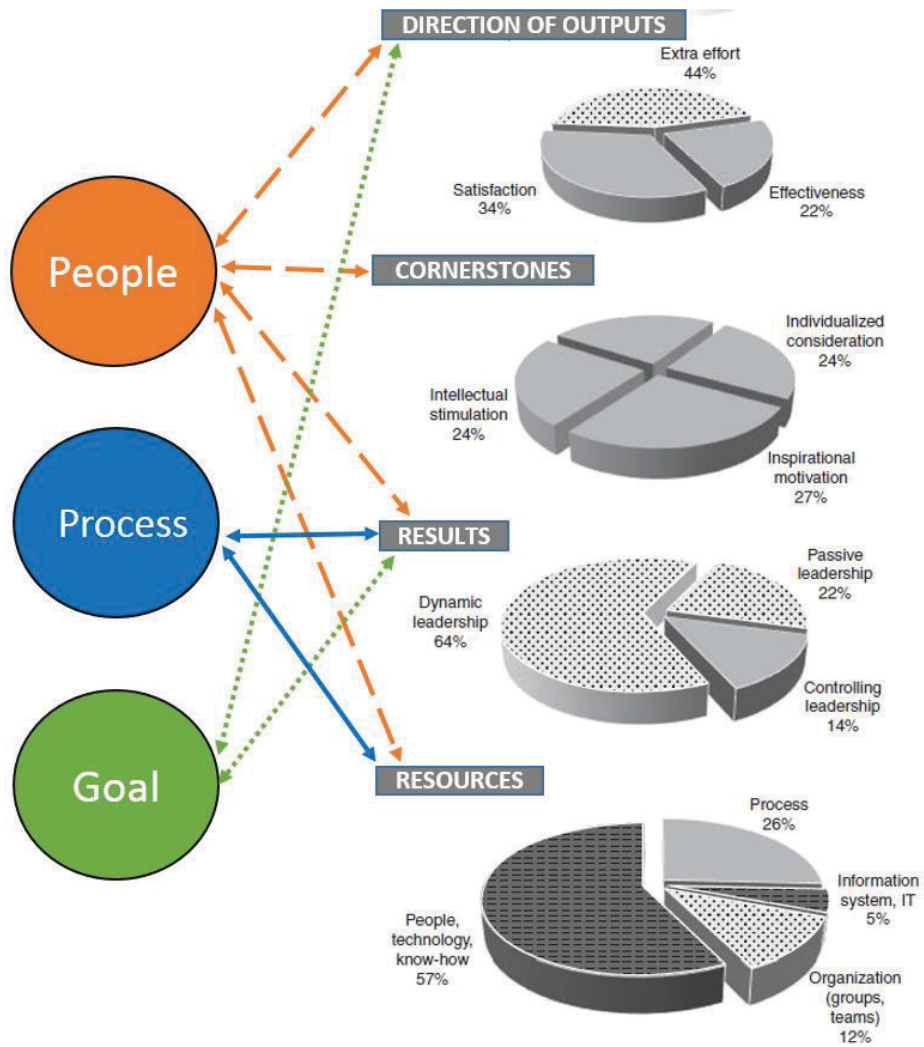


Figure 6. Relationship between the SCM and the PPGM